7

SERVICE MANUAL

A-400

STEREO CASSETTE DECK

TEAC

GENERAL INTRODUCTION

This Service Manual is compiled to assist service technicians by providing procedures and corrective measures for adjustment, care and maintenance, and the ordering procedures for needed parts.

If adjustments or repairs are too complicated and are difficult for you to accomplish, or if you have any technical questions, please contact the nearest TEAC Factory Service Department or write directly to a TEAC office, the addresses of which are written on the back cover.

NOTE

When ordering replacement parts, please refer to the PARTS LIST which is printed separately from this manual.

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1. SPECIFICATIONS & SERVICE DATA

SPECIFICATIONS

Track System	1/4-track, 2-channel stereo
Type of Tape	Cassette tape, C-60 and C-90 (Philips type)
Tape Speed	4.8 cm/s (1-7/8 ips)
Inputs	Microphones: Min. input level: –67 dB ±3 dB (10 Kohms or more)
(impedance and level)	Line: Specified input level: –9 dB (50 Kohms or more)
	Min. input level: –19 dB ± 3 dB
	DIN * : Min. input level: –35 dB ± 3 dB
Outputs	Line out: Max. output level: +8 dB ± 2 dB (50 Kohms)
(impedance and level)	Specified output level: +3 dB
	Headphones: Specified output level: –21 dB ± 2dB (8 ohms)
Equalization	EQ 1: 3180 μs + 70 μs (for CrO_2 tape)
	EQ 2: 3180 μs + 120 μs (for regular Hi-Fi tape)
Head Configuration	1/2-track, 1-channel Erase Head
	1/4-track, 2-channel Record/Playback Head
Motor	DC Servo Motor with F.G. voltage control
Bias Frequency	100 kHz
Operating Position	Horizontal
Power Requirements	100/117/220/240 V AC, 50/60 Hz (General Export Models)
	117 V AC 60 Hz (USA/Canada Models)
	220 V AC 50 Hz (Europe Models)
Power Consumption	11 W
Dimensions	440 (W) x 155 (H) x 285 (D) mm [17-3/8" (W) x 6-1/8" (H) x 11-1/4" (D)]
Weight	6.0 kg (13-1/4 lbs) net, approx.

* Pursuant to DIN Standards

SERVICE DATA

Mechanical

Tape Speed Deviation	3,000 Hz ± 45 Hz
Wow and Flutter	Playback: 0.1% (WRMS)
Pinch Roller Pressure	400 g ± 20 g (13.5 ~ 15.0 oz)
Reel Torque	Take Up: 45 ~ 70 g·cm (0.6 ~ 1.0 oz·inch)
	Fast Forward: 80 g·cm (1.1 oz·inch) or more
	Rewind: 100 g·cm (1.4 oz·inch) or more
Fast Winding Time	90 seconds for C-60
End-stop Activate Time	3 seconds ± 2 sec.

Electrical

Frequency Response	Refer to frequency response limits charts on pages 16, 18 and 19.
Signal to Noise Ratio	Playback method: 47 dB minimum
	Record/Playback method: BIAS/EQ 1: 45 dB minimum
	BIAS/EQ 2: 44 dB minimum
	With Dolby Noise Reduction used for recording and playback, S/N ratio is improved by 5 dB at 1 kHz and 10 dB at frequencies over 5 kHz.
Erase Efficiency	65 dB minimum
Channel Separation	30 dB minimum (at 1 kHz)
Crosstalk between Adjacent Tracks	40 dB minimum (at 125 Hz)
Total Harmonic Distortion	BIAS/EQ 1: 3.0% (maximum)
	BIAS/EQ 2: 2.5% (maximum)

NOTE:
- All the items were determined using the Regular type of Hi-Fi tape except as noted.
- Improvements may result in Specifications and Service Data changes.
- Value of "dB" in the Data refer to 0 dB = 0.775V, except where specified. If a Test Set or VTVM calibrated to 0 dB = 1V is to be used, appropriate compensation should be made.

2. PARTIAL DIS-ASSEMBLY OF MAIN PARTS

2-1. CABINET REMOVAL

1. Lay the deck on its top surface as illustrated in Fig. 1.
2. Remove the 7 screws from the bottom.
3. Remove the Main Chassis from the Cabinet.

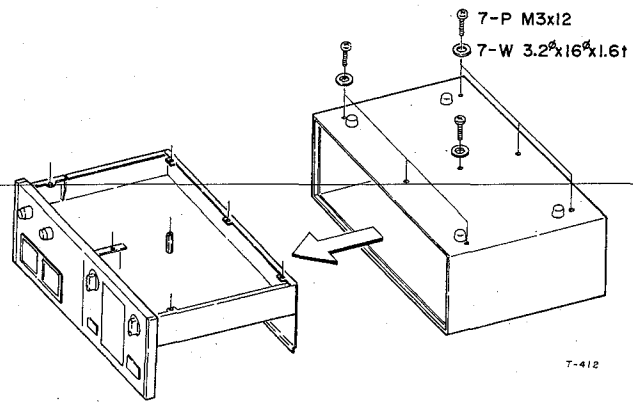


Fig. 1 Cabinet Removal

2-2. FRONT PANEL REMOVAL

1. Remove the Main Chassis from the Cabinet. (See Section 2-1)
2. Remove the 4 Control knobs from the Front Panel.
3. Remove the 6 screws.
4. Remove the Front Panel from the Main Chassis.

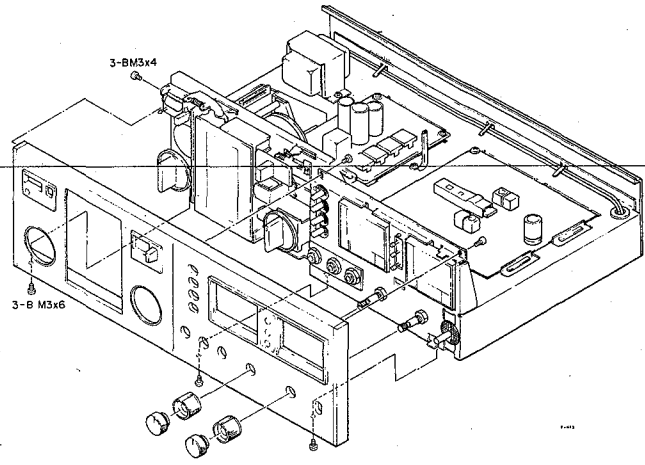


Fig. 2 Front Panel Removal

NOTE: For assembling hardware shape identification, see ASSEMBLING HARDWARE CODING LIST on the Parts List.

PARTS LOCATION

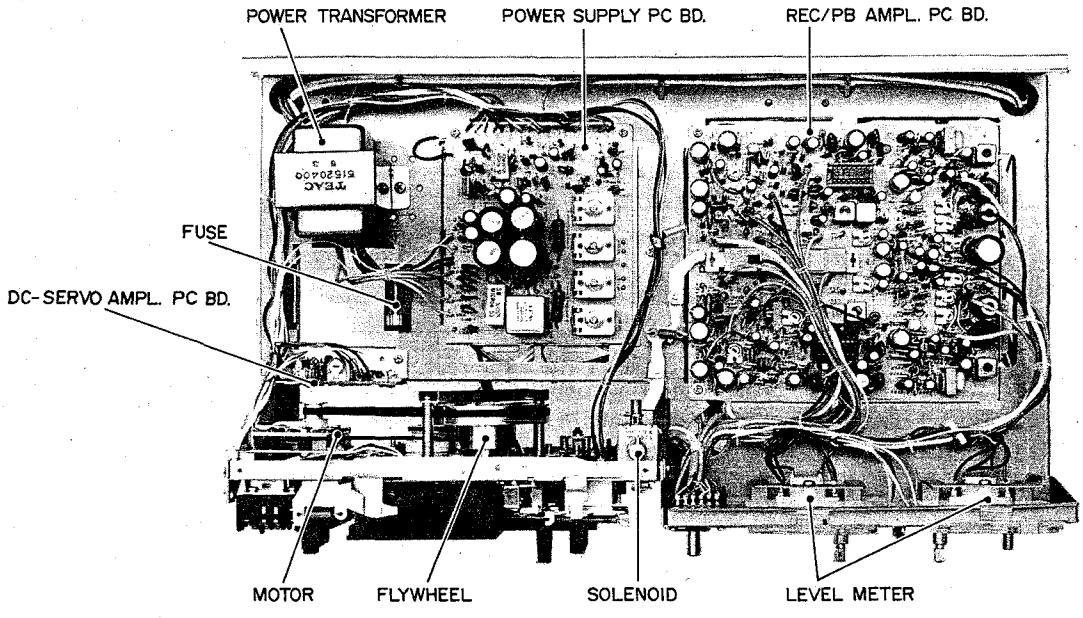


Fig. 3 Parts Location

2-3. CASSETTE HOLDER REMOVAL

1. Remove the Cabinet and the Front Panel. (See Section 2-1, 2-2)
2. Loosen the 2 screws (1) on the Bracket A (2) and the 2 screws (3) on the Bracket B (4). At this time, the work is made easier by expanding the Springs (5), (6) in the direction of the arrows.
3. Remove the Cassette Holder (7) from the Tape Transport Chassis.

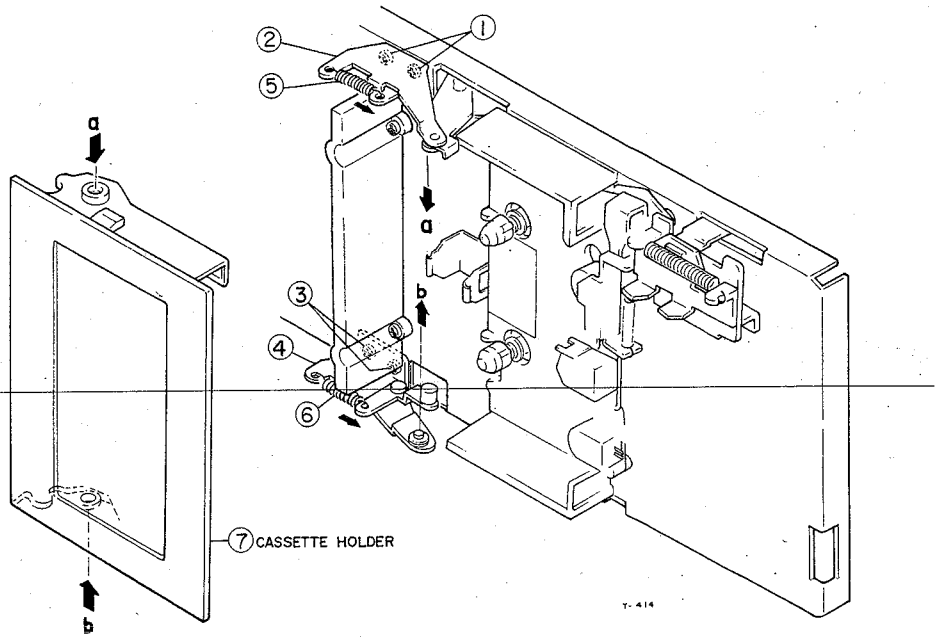


Fig. 4 Cassette Holder Removal

2-4. TAPE TRANSPORT CHASSIS REMOVAL

1. Remove the Cabinet and the Front Panel. (See Section 2-1, 2-2)
2. Remove the 4 screws (1)– (4).
3. Extract the Insulator Plate A (5) from the Main Chassis (6).
4. Remove the Reinforcing Angle (7) by taking off the 2 screws (8) and loosing the screw (9).
5. Retighten temporarily the screw (9).
6. Remove the Transport Chassis (10) from the Main Chassis (6).

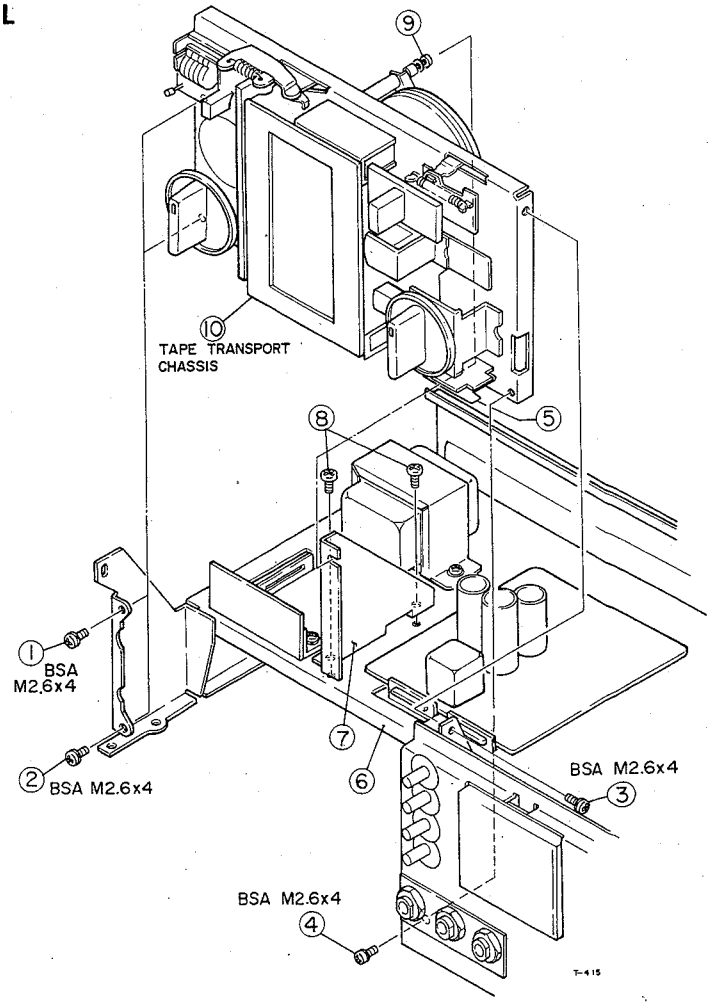


Fig. 5 Tape Transport Chassis Removal

NOTE: For assembling hardware shape identification, see ASSEMBLING HARDWARE CODING LIST on the Parts List.

2-5. HEAD REPLACEMENT

2-5A. Record/Playback Head

1. Remove the Cabinet and the Front Panel. (See Section 2-1, 2-2)
2. Open the Cassette Holder door to the 45 degree position by pushing the EJECT Lever to the right, and to the full 85 degree position by pushing the door to the left.
3. Remove the Head Protector (1) by taking off the 2 screws (2).
4. Unsolder the wires from the head terminal pins (3).
5. Remove the Head (4) by taking off the nut (5) and the screw (6).
6. Re-solder each head wire to the newly replaced head as shown in Fig. 7.

2-5B. Erase Head

1. Repeat steps 1, 2 in 2-5A above. (Record/Playback Head)
2. Place the right Rotary Lever in the PLAY mode.
3. Unsolder the wires from the head terminal pins (7).
4. Remove the Head (8) by taking off the 2 screws (9).
5. Re-solder each head wire to the newly replaced head as shown in Fig. 7.

NOTE

1. After replacing the head and adjusting its azimuth (See Section 4-2-1), secure the screws and the nut with a drop of locking paint.
2. Connecting the wires to the head terminal pins should be done quickly to prevent breaking of internal wires of the head due to overheating.

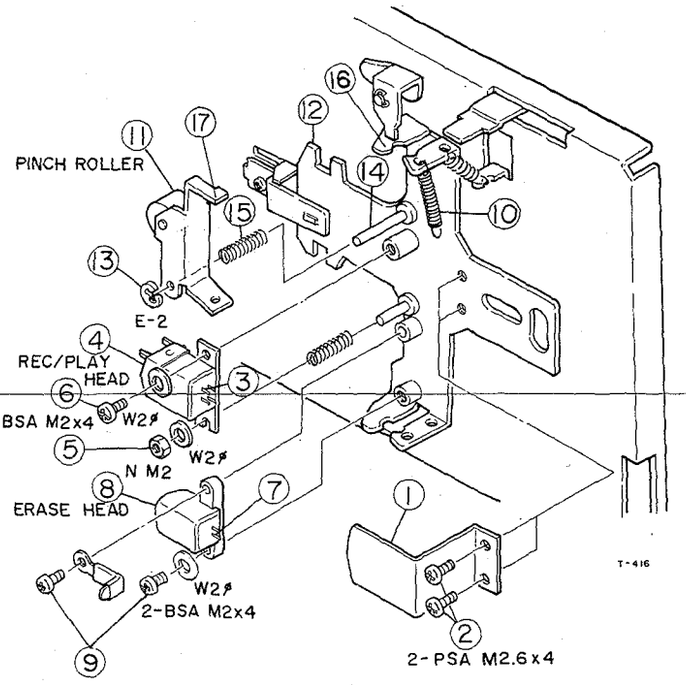


Fig. 6 Heads/Pinch Roller Replacement

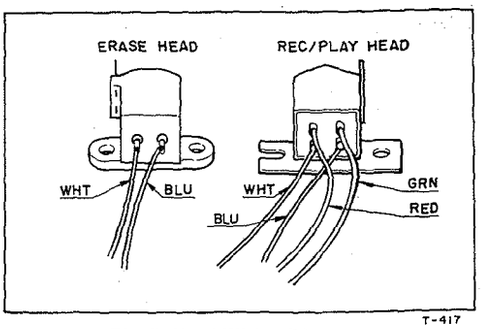


Fig. 7 Head Wiring Diagram

2-6. PINCH ROLLER REPLACEMENT

1. Remove the Cabinet and the Front Panel. (See Section 2-1, 2-2)
2. Open the Cassette Holder door to the 45 degree position by pushing the EJECT Lever to the right, and to the full 85 degree position by pushing the door to the left.
3. Remove the Spring (10) from the Pinch Roller (11) with the other end of this spring remaining attached to the Head Base Plate (12).
4. Remove the E-ring (13) slowly from the pivot pin (14).
5. Remove the Pinch Roller Ass'y (11) from the pivot pin (14). At this time, the work is made easier by pushing the EJECT Lever to the right.
6. Retain the Spring (15) and remember to re-install it when replacing the Pinch Roller.

NOTE

Make sure that the arm (16) fits properly into the guide (17) in the Pinch Roller Ass'y as shown in Fig. 6.

NOTE: For assembling hardware shape identification, see ASSEMBLING HARDWARE CODING LIST on the Parts List.

2-7. REEL TABLE REPLACEMENT

2-7A. Take-up Reel Table

1. Remove the Cabinet and the Front Panel. (See Section 2-1, 2-2)
2. Open the Cassette Holder door to the 45 degree position by pushing the EJECT Lever to the right, and the full 85 degree position by pushing the door to the left.
3. Remove the Cassette Guide Plate (1) from the Tape Transport Chassis by taking off the 4 screws (2).
4. Remove the Index Counter Belt (3) from the groove of the Take-up Reel Table (4) and the Index Counter Pulley.
5. Remove the Flywheel Ass'y (See 2-9).
6. Remove the Cassette Holder Stopper (5) and the Reel Table (4) simultaneously by taking off the 2 screws (6).

2-7B. Supply Reel Table

1. Repeat steps 1 to 3 in 2-7A (Take-up Reel Table).
2. Remove the Cassette Holder Stopper (7) and the Supply Reel Table (8) at the same time by taking off the 2 screws (9).

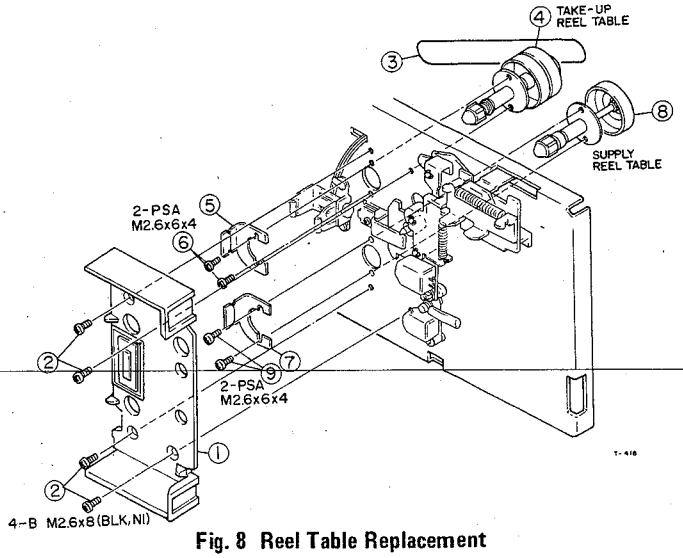


Fig. 8 Reel Table Replacement

2-8. MOTOR REPLACEMENT

1. After removing the Tape Transport Chassis from the Main Chassis, do the following procedures (See Section 2-1, 2-2, 2-4).
2. Remove the Capstan Belt (1) from the Motor Pulley (2).
3. Remove the PC Board (part of the Motor Assy) (3) from the Main Chassis.
4. Bend open the Wire Clamp (4) to loosen the wires.
5. Unsolder the 2 wires (5) (connected from the Power Supply PC Board) to the PC Board (3).
6. Remove the screw (6) attaching the Cassette Guide B (7), and loosen the screw (13), and turn the Guide slightly in the direction of the arrow. (for access to the Motor)
7. Remove the Motor Assy (incl. the Motor Mount. Plate (9)) (8) from the Transport Chassis by taking off the 3 nuts (10).
8. Remove the Motor Assy (11) from the Motor Mount. Plate (9) by taking off the 3 screws (12).

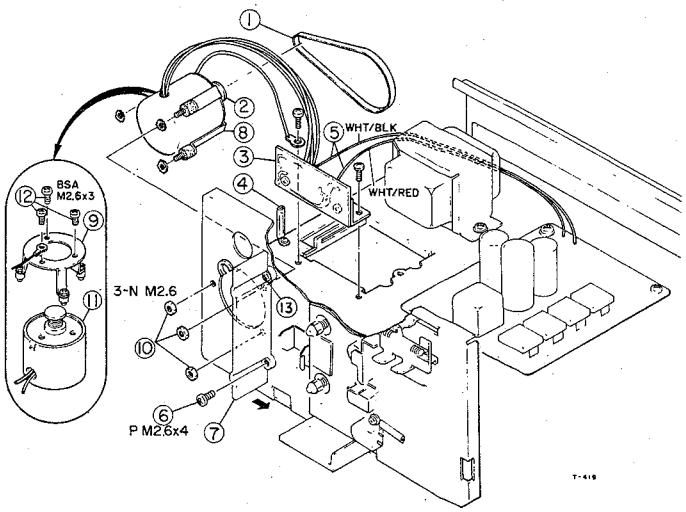


Fig. 9 Motor Replacement

NOTE

Since the entire Motor Assy includes the DC-servo Ampl. PC Board (provided for motor speed control), always replace the Motor together with its PC Board.

NOTE: For assembling hardware shape identification, see ASSEMBLING HARDWARE CODING LIST on the Parts List.

2-9. FLYWHEEL/CAPSTAN BELT REPLACEMENT

1. After removing the Tape Transport Chassis from the Main Chassis, perform the following process. (See Section 2-1, 2-2, 2-4)
2. Remove the Flywheel Bearing Plate (1) from the mounting studs (2) by taking off the 2 screws (3).
3. Retain the Spacer (9) and remember to re-install it when replacing the Flywheel Assy.
4. Remove the Capstan Belt (4) from the Flywheel Assy (5) and the Motor Pulley (6).
5. Remove the Oil Retaining Washer (7) from the shaft of the Flywheel.
6. Carefully lift out the Flywheel (5) from the Capstan Housing (8).

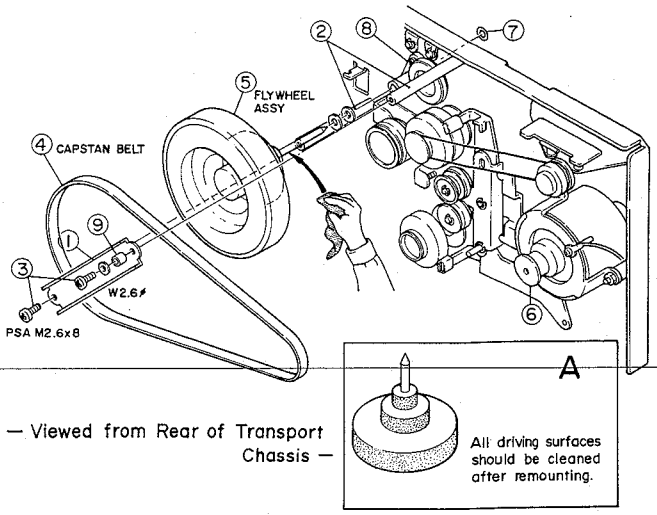


Fig. 10 Flywheel/Capstan Belt Replacement

NOTE

After reinstalling the Flywheel, always do the following.

1. Clean all driving surfaces of the Flywheel with TEAC TZ-261A Head Cleaner or with pure alcohol as shown in "A" in Fig. 10.
2. Clean the Capstan Belt with TEAC TZ-261B Rubber Cleaner or with pure alcohol.
3. Apply a drop of a light machine oil with an oil applicator to the shaft of the Flywheel and spread oil evenly over the shaft with a flannel cloth. After installing the Flywheel be sure to clean the tape moving portion of shaft with TZ-261A Head Cleaner.

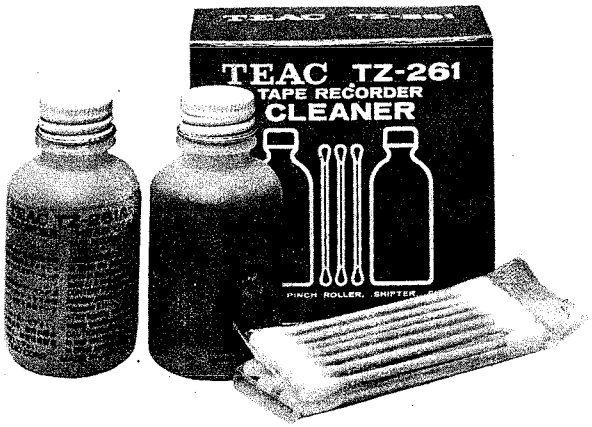


Fig. 11 TZ-261 Tape Recorder Cleaner Kit

2-10. FAST WIND IDLER ASS'Y REPLACEMENT

1. First perform the steps listed below.
   a. Cabinet Removal (Section 2-1)
   b. Front Panel Removal (Section 2-2)
   c. Tape Transport Chassis Removal (Section 2-4)
   d. Flywheel/Capstan Belt Removal (Section 2-9)
   e. Take-up Reel Table Removal (Section 2-7A)
2. Remove the Spring (1) from the Fast Wind Idler Assy (2) and the Fast Wind Plate (3). (Note that the position of the Spring (1) and the arm of the Fast Wind Idler Ass'y. on which the Spring is mounted. Position the Spring and the arm correctly when replacing or re-installing the Fast Wind Idler Ass'y.)
3. Remove the E-ring (4) from the pivot pin (5).
4. Lift out the Fast Wind Idler Assy (2) from the pivot pin (5)
5. Before re-assembling the Idler Assy, turn the left Rotary Lever to the FF position to simplify remounting.

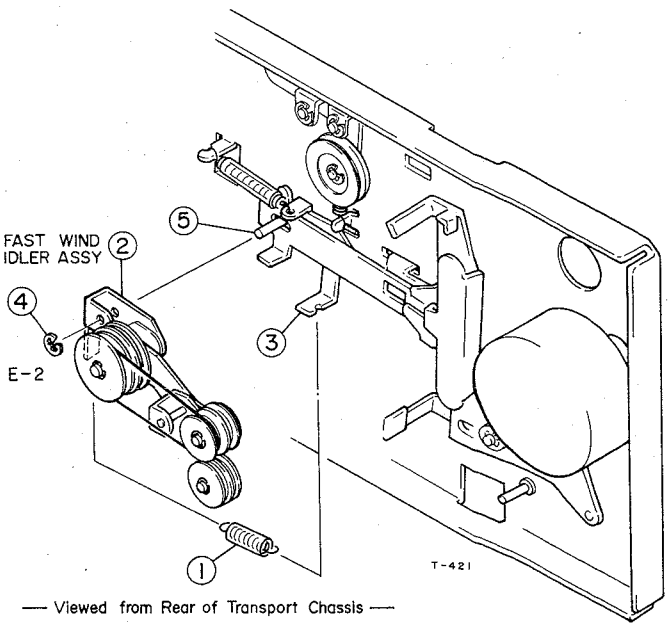


Fig. 12 Fast Wind Idler Replacement

NOTE: For assembling hardware shape identification, see ASSEMBLING HARDWARE CODING LIST on the Parts List.

3. MECHANICAL CHECKS AND ADJUSTMENTS

TEST EQUIPMENT REQUIRED

1. Spring scale: For take-up torque check: 0 ~ 70g (0 ~ 2.5 oz)
   For fast forward and rewind torque checks: 0 ~ 200g (0 ~ 7.0 oz)
2. String: Length: about 50 cm (20")
3. Cassette Reel Adapter: Diameter: 22 mm

* The tools above (1 ~ 3) are constructed as shown in Fig. 13.

4. Cassette Torque Meter: For take-up torque check: 0 ~ 100 g·cm
   For fast forward and rewind torque checks: 0 ~ 160 g·cm

* Use of the Cassette Torque Meter instead of the spring scale, if you have one, is recommended for easier measuring. (See Fig. 19 on Page 11)

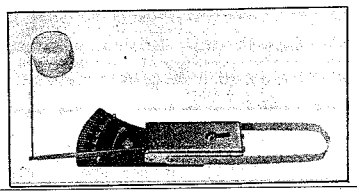


Fig. 13 Spring Scale and Cassette Reel Adapter

5. Spring scale (for the Pinch Roller pressure check): 0 ~ 1 kg (2.2 lbs)
6. TEAC MTT-111 test tape: For tape speed and wow/flutter checks
7. Wow/Flutter meter: MEGURO DENPA SOKKI K.K. Model MK-668A, D & R Co., FL-4B or equivalent.
8. Frequency counter: Digital type, capable of 10 Hz to 100 kHz indication.

NOTE

All the mechanical checks and adjustments should be done with the Cabinet and the Front Panel removed. (See Section 2-1, 2-2)

3-1. PINCH ROLLER PRESSURE

The Pinch Roller pressure should be: 400 g ± 20 g (13.5 ~ 15.0 oz)

1. Open the Cassette Holder door to the left.
2. Switch the POWER switch to the ON position.
3. Place the deck in the PLAY mode with no tape loaded.
4. Attach the spring scale to the Pinch Roller shaft as shown in Fig. 14.
5. Gently draw the scale away (in the direction of the arrow) until the Capstan shaft and the Pinch Roller are completely separated.
6. Gradually release the tension on the scale until the Pinch Roller just begins to rotate. The scale should then be reading approximately 400 g ± 20 g (13.5 ~ 15.0 oz).
7. If the reading is out of specified range, adjust the tension of the Pressure Spring by bending the tab of the Pinch Roller Assy slightly.

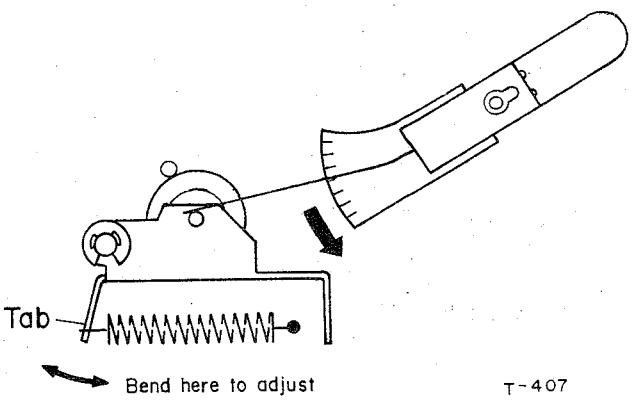


Fig. 14 Pinch Roller Pressure Measurement

3-2. TAKE-UP TORQUE MEASUREMENT

The take-up torque should be: 45 ~ 70 g·cm (0.6 ~ 1.0 oz·inch)

1. Open the Cassette Holder door fully to the left.
2. Remove the Cassette Guide Plate. (See 2-7A in Section 2-7)
3. Switch the POWER switch to the ON position.
4. Set the Cassette Reel Adapter (22 mm Dia.), connected to the spring scale (0 ~ 70 g, or 0 ~ 2.5 oz) by the string, on the Take-up Reel Table as shown in Fig. 15.
5. Place the deck in the PLAY mode.
6. Allow the rotation of the Reel Table to draw the scale pointer toward the Adapter with the spring scale moving in the same direction at nearly the same speed as the tape would be moved, and obtain the scale reading. Make reading only when the pointer becomes stable.
7. The scale should indicate 41 ~ 64 g (1.4 ~ 2.2 oz). This corresponds to a torque of 45 ~ 70 g·cm (0.6 ~ 1.0 oz·inch). For the torque calculation, refer to Fig. 16.
8. If the reading is out of specified range, clean the driving surfaces of the Reel Table Assy, the Play Idler and the Flywheel with the TEAC TZ-261B Rubber Cleaner or with pure alcohol (Fig. 17)
9. If the above cleaning is ineffective for torque correction, replace the Reel Table Assy. (See Section 2-7)

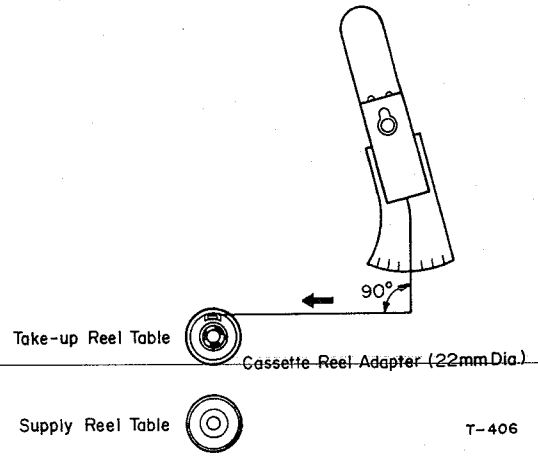
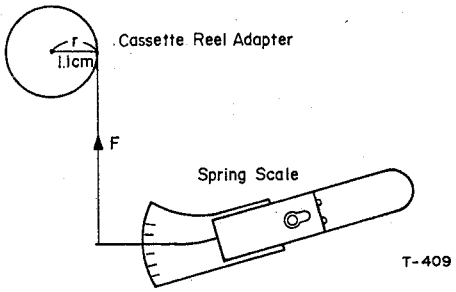


Fig. 15 Take-up/Fast Forward Torque Measurement



T = F x r
T: torque (g·cm)
F: force (g)
r: radius (cm)

For example:
If F = 41 g

T = F x r
= 41 x 1.1
≒45 (g·cm)

Consequently the torque is 45 g·cm.

Fig. 16 Torque Calculation Method

3-3. FAST FORWARD TORQUE MEASUREMENT

The fast forward torque should be: 80 g·cm (1.1 oz·inch) or more

1. Repeat step 1 to 3 in 3-2 above.
2. Set the Cassette Reel Adapter (22 mm Dia.), connected to the spring scale (0 ~ 200 g, or 0 ~ 7.0 oz) by the string, on the Take-up Reel Table as shown in Fig. 15.
3. Place the deck in the FF mode.
4. Permit the revolution of the Reel Table to pull the scale pointer toward the Adapter, and obtain the scale reading. Do not read until the pointer becomes stable.
5. The scale should indicate 73 g (2.6 oz) or more. This corresponds to a torque of 80 g·cm (1.1 oz·inch) or more.
6. If the indication is out of specified range, clean the driving surfaces of the Reel Table Assy, the Fast Wind Idler Assy and the Flywheel with the TEAC TZ-261B Rubber Cleaner or with pure alcohol. (Fig. 17)
7. If the above cleaning is ineffective for the torque correction, replace the Fast Wind Idler Assy. (See Section 2-10)

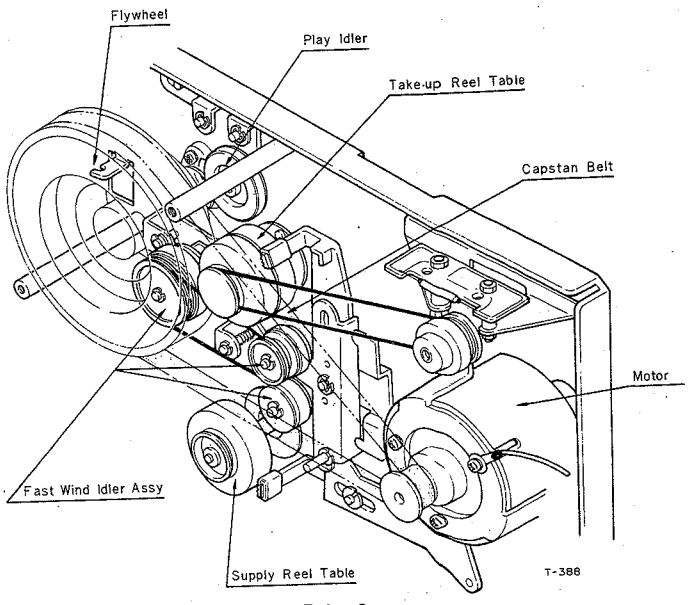


Fig. 17 Tape Drive System

3-4. REWIND TORQUE MEASUREMENT

The rewind torque should be: 100 g·cm (1.4 oz·inch) or more

1. Repeat the above procedure, but use the Supply Reel Table and the REW mode for measuring the rewind torque. (See Fig. 18)
2. The scale should indicate 91 g (3.2 oz) or more. This corresponds to a torque of 100 g·cm (1.4 oz·inch) or more.

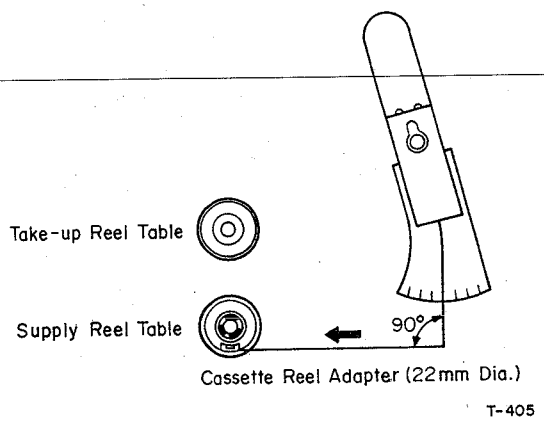


Fig. 18 Rewind Torque Measurement

TORQUE MEASUREMENT USING THE CASSETTE TORQUE METER

The torque measurements can be easily done with the Cassette Torque Meter indicated below.

For take-up torque measurement: 0 ~ 100 g·cm
For fast forward and rewind torque measurements: 0 ~ 160 g·cm

By this use, it is possible to directly obtain the torque value without calculation, and to do the measurement simply with no removal of any parts. If repairs are necessary, the Cabinet and the Front Panel must be removed.

Load the Meter on the deck and read the pointer indication on the dial scale.

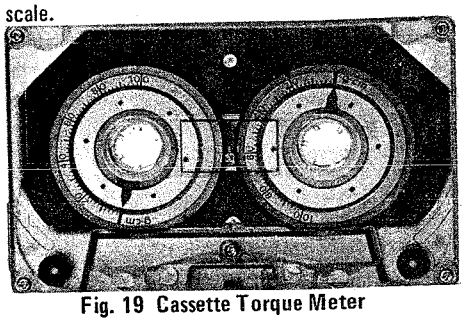


Fig. 19 Cassette Torque Meter

3-5. TAPE SPEED ADJUSTMENT/WOW AND FLUTTER MEASUREMENT

The tape speed deviation indication should be: 3,000 Hz ± 45 Hz
The wow and flutter should be: within 0.10% WRMS

NOTE

1. The adjustment explained in this section employs the playback method.
2. Before performing this adjustment, clean all the tape path, particularly the Capstan, the Pinch Roller and the Heads with TEAC TZ-261 Cleaner Kit or with pure alcohol as appropriate.
3. As the measured results will vary with respect to location on tape at which it was taken, three points – at beginning, middle and near the end of the tape – should be measured.

1. Connect a digital frequency counter and a wow and flutter meter to either OUTPUT jack.
2. Place the OUTPUT control on the deck in the specified setting. (See Section 4-2-2)
3. Load and play a TEAC MTT-111 test tape (3,000 Hz signal is recorded) on the deck.
4. Adjust the semi-fixed resistor (See Fig. 21) on the DC-servo Ampl. PC Board for reading of 3,000 Hz ± 45 Hz on the frequency counter. (Tape speed adjustment)
5. Read the indication on the wow and flutter meter.
6. The wow and flutter value should be 0.10% WRMS, max.
7. If the wow and flutter is out of the specification, check the Pinch Roller pressure and the take-up torque, and see that the tape path is clean, and that the Capstan Belt is not stretched or oily.
8. If the above checks are ineffective for excessive wow and flutter correction, repair or replace the Pinch Roller, the Capstan Belt and/or any other defective parts.

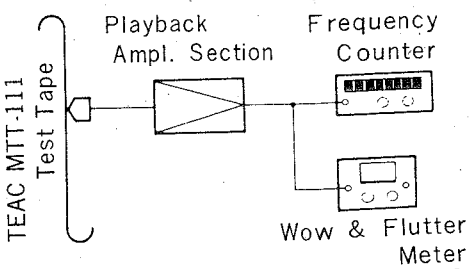


Fig. 20 Tape Speed/Wow and Flutter Measurement Setup

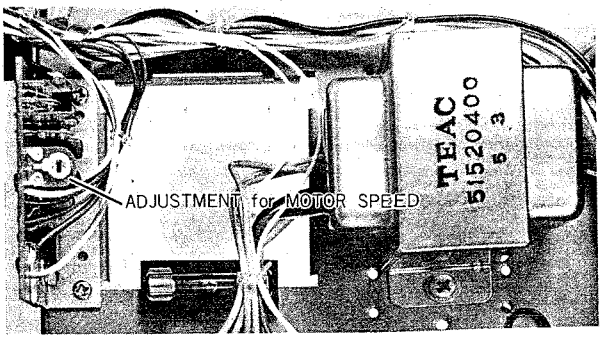
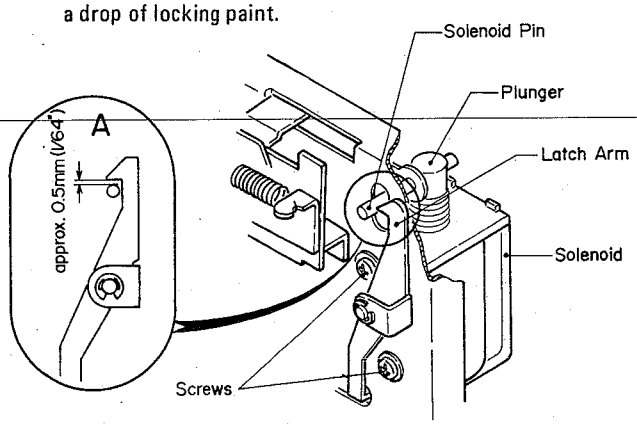


Fig. 21 Motor Speed Adjustment Location

3-6. SOLENOID POSITION ADJUSTMENT

1. Place the deck in the PLAY mode with no power applied.
2. Depress the plunger by hand until the plunger is fully bottomed, and the Latch Arm latches the solenoid pin.
3. Adjust the Solenoid position by loosening the 2 screws so that the clearance between the Latch Arm and the solenoid pin is approximately 0.5 mm (1/64") as shown in A of Fig. 22.
4. After adjusting, retighten the 2 screws and secure them with a drop of locking paint.



Upper right hand corner of Transport Chassis (viewed from front)

Fig. 22 Solenoid Position Adjustment

3-7. MUTING SWITCH POSITION ADJUSTMENT

1. Before adjusting this, be sure that no power is applied to the deck.
2. Loosen the 2 screws as shown in Fig. 23.
3. Turn the right Rotary Lever to the PLAY position.
4. Lightly force the Muting Switch PC Board to the right (toward the arrow) as far as possible by hand, and retighten the 2 screws.
5. After adjusting, secure the 2 screws with a drop of locking paint.

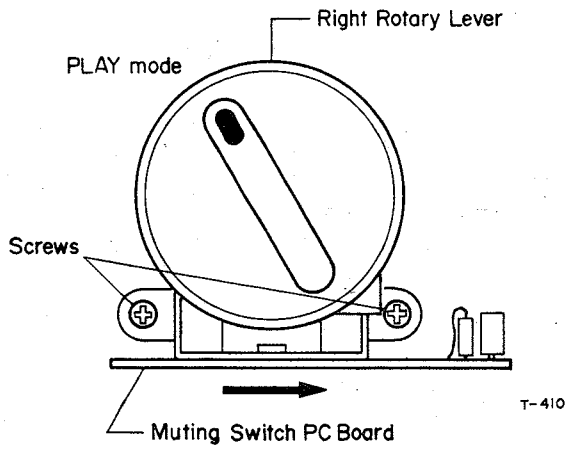


Fig. 23 Muting Switch Position Adjustment

3-8. VOLTAGE SELECTOR SETTING PROCEDURE
(General Export Models)

1. Disconnect the power cord of the deck from the source.
2. Turn the deck around and locate the voltage selector on the rear of the deck. (See Fig. 24)
3. Loosen the screw on the right end of the metal bar covering the voltage selector and then rotate the bar so the slotted center post of the voltage selector can be adjusted.
4. To increase the selected voltage, turn the slotted center post clockwise.
5. To decrease the selected voltage, turn the slotted center post counter-clockwise.
6. The numerals that appear in the cut-out window of the voltage selector indicate the selected voltage.

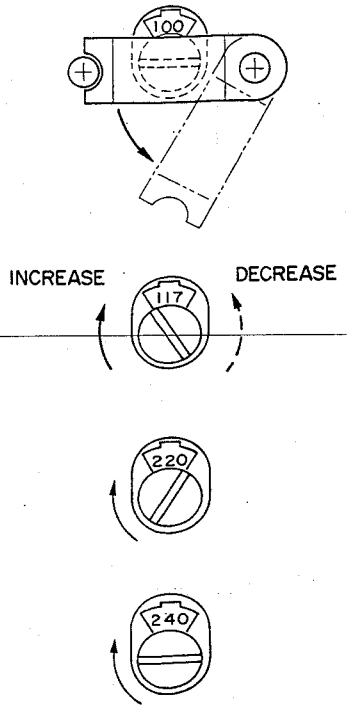


Fig. 24 Voltage Selector Setting

3-9. AC POWER LINE FREQUENCY ADAPTATION

Since the A-400 employs a DC-servo controlled motor, 50 Hz or 60 Hz operation is permitted without power line frequency adaptation.

3-10. LUBRICATION

Apply 1 or 2 drops (approx. 0.2 cc) of a light machine oil with an oil applicator to the shaft bearing portion of the Capstan Assy. See Fig. 25. (See Section 2-9 for lubrication of the newly replaced Flywheel Assy.)
No other lubrication is normally necessary.

NOTE

Lubrication of the Capstan Assy should be generally done at about every1,000hour operating time of the tape deck. Use high quality oil for this purpose.

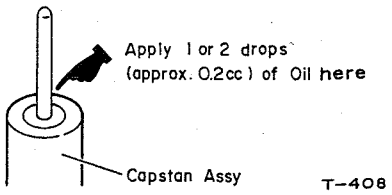


Fig. 25 Lubrication of Capstan Assy

4. ELECTRICAL CHECKS AND ADJUSTMENTS

GENERAL NOTICE

1. Before performing adjustments on the amplifier section of this deck, thoroughly clean and demagnetize the entire tape path, particularly erase head, record/playback head, capstan shaft and pinch roller.
2. In general, checks and adjustments for other than specified items, are done in the sequence of left channel then right channel. Double designated REF. NO. indicates left channel/right channel (example: VR101/VR201).
3. Value of "dB" in the text refers to 0 dB = 0.775 V, except where specified. If a VTVM calibrated to 0 dB = 1 V is to be used, appropriate compensation should be made.
4. The load impedance for OUTPUT terminal is 50 k-ohms.
5. The load impedance for Dolby Test Point is 1 M-ohms or more.
6. While performing all electrical alignments, the INPUT switch should be placed in the LINE position, unless otherwise indicated.
7. All checks and adjustments should be made with the Cabinet and the Front Panel removed. (See Section 2-1, 2-2)

TEST EQUIPMENT REQUIRED

1.	TEAC test tape:	For playback performance alignment: MTT-150: For Dolby level calibration MTT-116L: For playback frequency response check For record performance alignment: MTT-505: For record test with BIAS/EQ "1" MTT-501: For record test with BIAS/EQ "2"
2.	AF oscillator:	10 Hz ~ 100 kHz
3.	VTVM:	0.1 mV ~ 300 V
4.	Attenuator	General Purpose
5.	Distortion analyzer:	Basic frequency 400 Hz/1 kHz
6.	Oscilloscope:	General purpose
7.	Band-pass filter:	1 kHz narrow band-pass type
8.	Test load resistor:	Non inductive type 8 ohm/1 W
9.	Non-inductive driver	
10.	Head demagnetizer	TEAC E-1 or equivalent

4-1. MONITOR PERFORMANCE

NOTE

Place DOLBY NR switch to OUT position for this monitor circuit alignment procedure.

4-1-1. Specified Input Level Setting

1. Connect an AF oscillator to the LINE IN jacks, through an attenuator.
2. Connect a VTVM between the T.P. (test points) for VR102/VR202 and ground on the REC/PB amplifier PC board.
3. Load a TEAC MTT-505 test tape (blank) on the deck.
4. Place the deck in the PAUSE mode.
5. Apply a 400 Hz signal/–9 dB (274 mV) to the LINE IN jacks.
6. Turn the RECORD controls to obtain the reading of –25 dB (43.5 mV) on the VTVM. Note the position of the RECORD control as this is the specified RECORD control setting referred to in subsequent procedures.
7. Connect the VTVM between the Dolby T.P. (test points) and the ground on the REC/PB amplifier PC board.
8. Adjust VR102/VR202 to obtain 580 mV (–2.5 dB).

4-1-2. Minimum Input Level Checks

9. Turn the RECORD controls fully clockwise.
10. Apply a 400 Hz test tone at minimum input level as listed below to each input jack.
11. Check for (the specified value of) 580 mV (–2.5 dB) at the Dolby test points using the VTVM.

Input Jacks	INPUT Switch Position	Minimum Input Level
LINE IN	LINE	–19 dB ± 3 dB (61.5 mV ~ 122 mV)
MIC	MIC/DIN	–67 dB ± 3 dB (0.244mV~0.488mV)
DIN	MIC/DIN	–35 dB ± 3 dB (9.75 mV ~ 19.4 mV)

4-1-3. Level Meter Calibration

12. Set the INPUT Switch to the LINE position.
13. Set the AF oscillator for 400 Hz at –9 dB (274 mV) and set RECORD controls to specified level. (same as set in 4-1-1)
14. Adjust VR103/VR203 for +3 VU (marked with "□□") on the level meter on the deck.

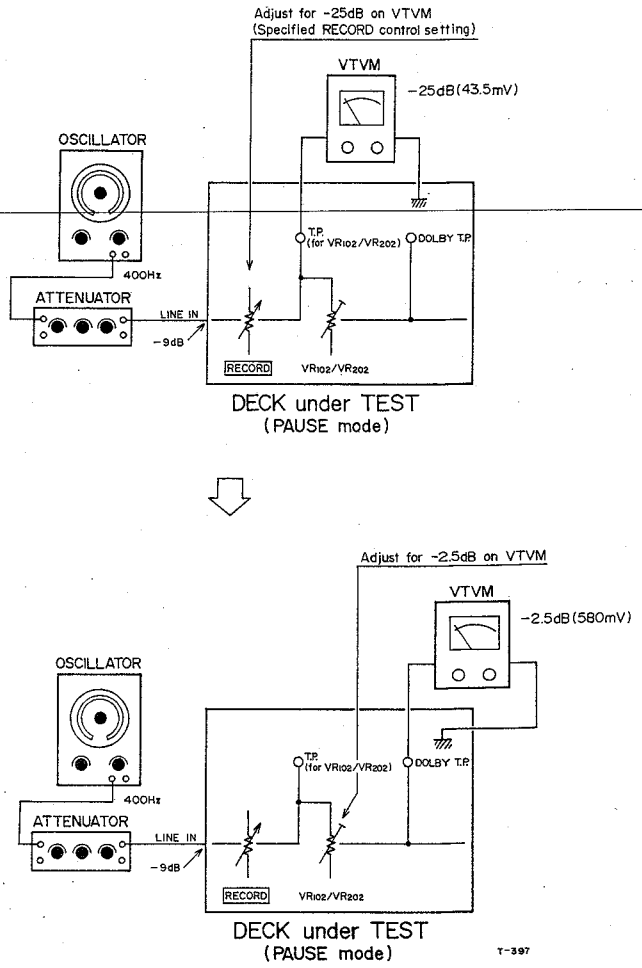


Fig. 26 Test Condition for Specified Input Level Setting

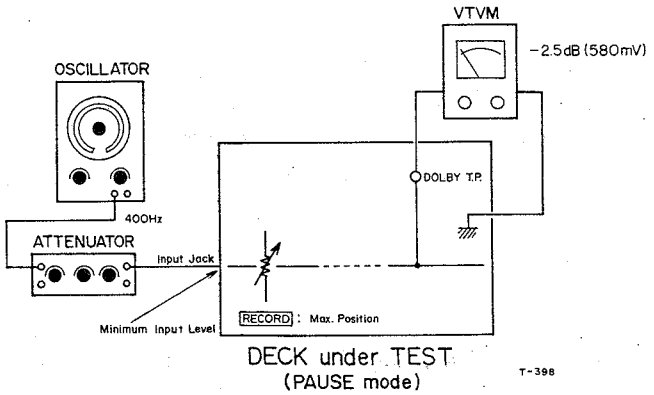


Fig. 27 Test Condition for Minimum Input Level Checks

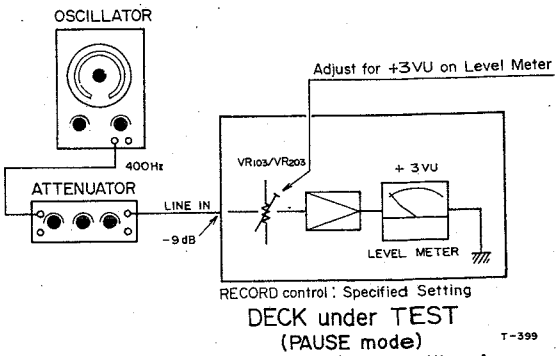


Fig. 28 Test Condition for Level Meter Calibration

NOTE: For actual adjustment/test point locations, see page 21.

4-1-4. Peak Level Indicator Setting

15. Adjust VR106/VR206 so that the peak level indicator lights at full intensity when 400 Hz signal at –6 dB (388 mV) (+3 dB above specified input level) is applied to the deck; and goes off completely when the 400 Hz signal is reduced to –8 dB (308 mV) (+1 dB above specified input level).

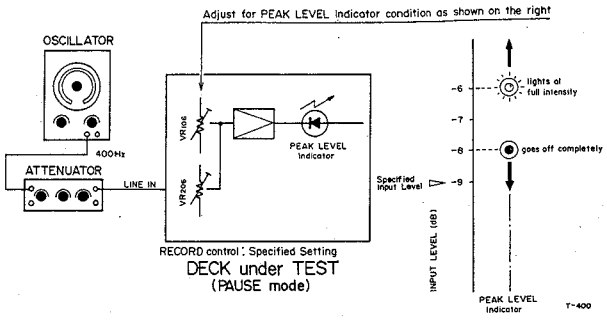


Fig. 29 Test Condition for Peak Level Indicator Setting

4-1-5. Headphone Output Level Checks

The value should be: –21 dB ± 2 dB (54.8 mV ~ 86 mV)

NOTE

These checks should be done after setting the specified output level. (See 4-2-2.)

1. Connect test equipment to the deck as shown in Fig. 30. An 8 ohm non-inductive resistor should be used as the test load resistor.
2. Load a TEAC MTT-505 test tape (blank).
3. Place the deck in the PAUSE mode.
4. Apply the 400 Hz signal at –9 dB and set the RECORD controls to the specified setting position. (See steps in 4-1-1.)
5. Measure the level across the test load resistor.
6. The value should be –21 dB ± 2 dB (54.8 mV ~ 86 mV).

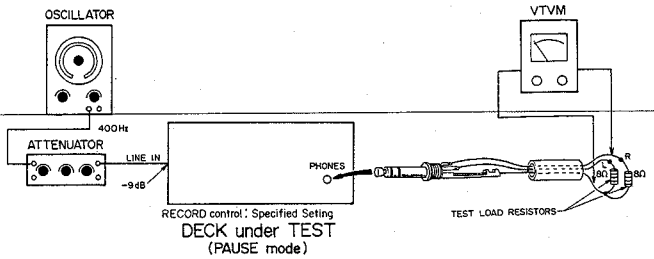


Fig. 30 Test Condition for Headphone Output Level Checks

IMPORTANT

After completing alignment of the monitor circuit, do not disturb the specified input level position of the RECORD controls until the remaining checks and adjustments are completed.

4-2. PLAYBACK PERFORMANCE

NOTE

Set the BIAS and EQ switches to position "2", and the DOLBY NR switch to the OUT position for this playback performance alignment procedure.

4-2-1. Record/Playback Head Azimuth Adjustments

1. Connect an oscilloscope to the OUTPUT jacks as illustrated in Fig. 31.
2. Connect a VTVM to either OUTPUT jack.
3. Load a TEAC MTT-150 test tape on the deck.
4. Play Dolby tone in the tape.
5. Make sure that the phase relationship between the 2 signals (left channel and right) is within 45° on the oscilloscope.
6. Install a TEAC MTT-116L test tape.
7. Play the 10 kHz/–10 dB signal section of the tape.
8. Slowly adjust the azimuth adjusting nut for the maximum indication on the VTVM.
9. Secure the nut with a drop of locking paint.

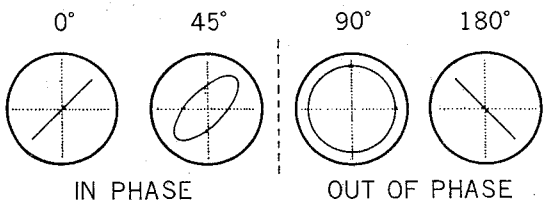


Fig. 32 Confirming Phase Relationship

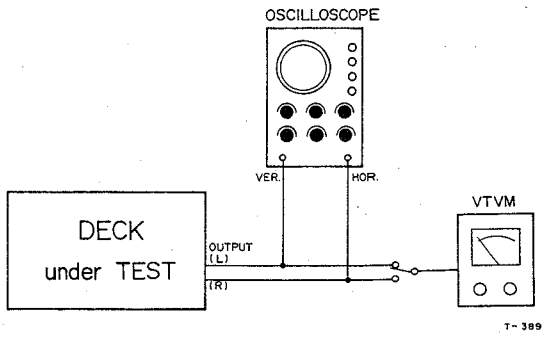


Fig. 31 Head Phase Check Setup

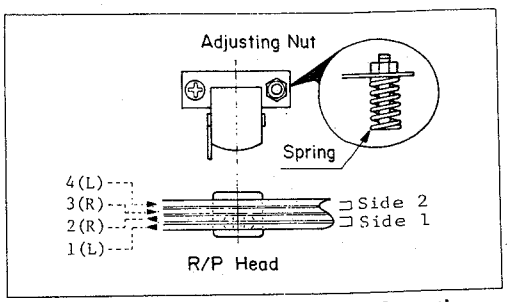


Fig. 33 Head Azimuth Adjustments Location

4-2-2. Specified Output Level Setting

1. Connect a VTVM between the Dolby T.P. (test points) and Ground on the REC/PB amplifier PC Board.
2. Load a TEAC MTT-150 test tape on the deck.
3. Play Dolby tone in the tape.
4. Adjust VR101/VR201 for 580 mV (–2.5 dB) on the VTVM.
5. Connect the VTVM to the OUTPUT jacks.
6. Turn the OUTPUT controls fully clockwise.
7. Cónfirm that the output level is +9 dB ± 2 dB (1.73 V ~ 2.74 V).
8. Set the OUTPUT controls for a reading of +3 dB (1.09 V) on the VTVM. This is the specified output level.

IMPORTANT

After setting the specified output level, do not disturb the OUTPUT controls until the remaining adjustments and checks have been completed.

4-2-3. Level Meter Indication Checks

9. After setting the specified output level, make certain that the indications on the level meters of the deck are +3 VU ± 1.5 VU.

4-2-4. Playback Frequency Response Checks

10. Load a TEAC MTT-116L test tape.
11. Play the test tones from 40 Hz up to 10 kHz.
12. Check that the reading obtained on the VTVM is within the response limits in reference to the 333 Hz/–10 dB signal section of the tape.

NOTE

If the response does not meet specified response limits, the head should be checked for accumulated oxide or dirt. Then, if no dirt is found, the head azimuth should be readjusted.

4-2-5. Signal-to-Noise Ratio Checks

The S/N ratio should be: 47 dB (minimum)

IMPORTANT

Prior to these checks, confirm that the OUTPUT controls are at specified output level position.

1. Connect a VTVM to the OUTPUT jacks.
2. Place the deck in the PLAY mode with no tape loaded.
3. Read the indication on the VTVM connected to the OUTPUT jacks.

NOTE

Since the polarity of the AC plug has some effect on the S/N ratio, the plug can be reversed in the wall socket when checking the S/N ratio. The worse case value should be within the indicated value above.

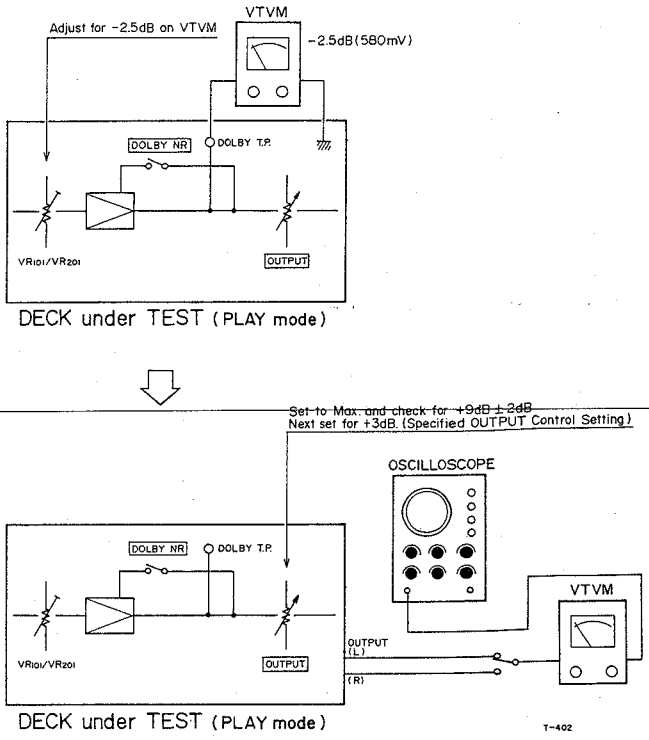


Fig. 34 Test Condition for Specified Output Level Setting

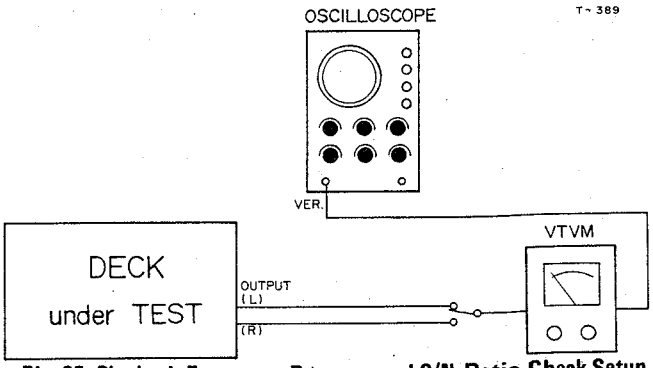


Fig. 35 Playback Frequency Response and S/N Ratio Check Setup

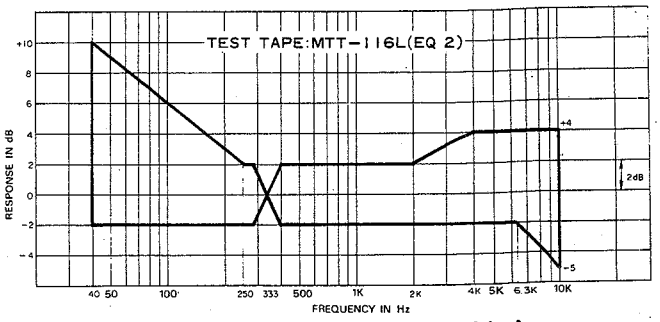


Fig. 36 Playback Frequency Response Limits

4. The VTVM should indicate –44 dB min. (4.88 mV maximum).
5. This corresponds to a signal-to-noise ratio of 47 dB (minimum): difference between residual noise –44 dB (4.88 mV) and the specified output level +3 dB (1.09 V).

NOTE: For actual adjustment/test point locations, see page 21.

4-3. RECORD PERFORMANCE

IMPORTANT

Before making any adjustments of the amplifier, be sure that all tests in the playback performance section have been accomplished and that all adjustments are correct. The playback performance should be properly adjusted.

NOTE

Place DOLBY NR switch to the OUT position for this record performance test unless otherwise noted.

4-3-1. Bias Trap Adjustments

The bias trap tank circuit keeps the bias signal from reaching the record amplifier.

1. Load a TEAC MTT-505 test tape on the deck.
2. Place the deck in the PAUSE mode with no signal applied.
3. Connect a VTVM between the Test Point (at junction of L103 and C142) and ground.
4. Adjust L103 for a minimum reading on the VTVM.
5. Connect the VTVM between the Test Point (at junction of L203 and C242) and ground.
6. Adjust L203 for a minimum reading on the VTVM.

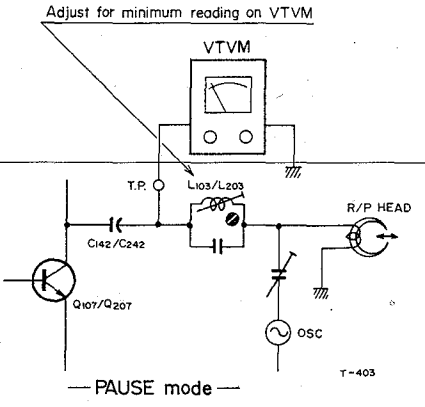


Fig. 37 Bias Trap Adjustment (and T.P.)

4-3-2. Bias Adjustments for "1" Position (CrO_2 Tape)

1. Load a TEAC MTT-505 test tape on the deck.
2. Connect a VTVM to the OUTPUT jacks.
3. Connect an AF oscillator to the LINE IN jacks, through an attenuator.
4. Place the BIAS/EQ switches to the "1" positions.
5. Place the deck in the record mode.
6. Apply 2 tone signals, in turn; a 1 kHz tone at −42 dB (6.15 mV) and a 10 kHz tone at −42 dB (6.15 mV).
7. Rewind and play this recorded section of the tape.
8. Compare the differences between the output level of the 1 kHz signal and that of the 10 kHz signal on the VTVM.
9. The output level of the 10 kHz signal must be 1 dB below the 1 kHz signal level.
10. Adjust VC304/VC302, if necessary, to achieve this.
11. Continue the process of the recording-rewinding-playing-adjusting until this difference of 1 dB is obtained.

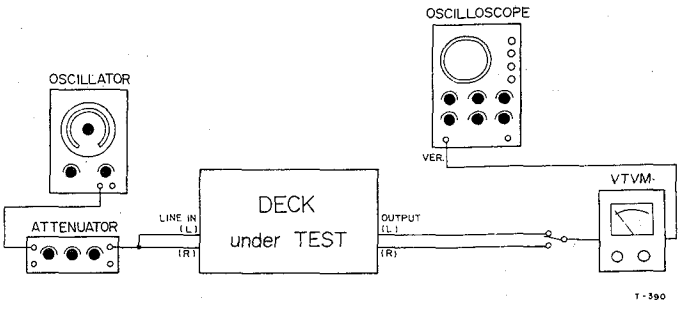


Fig. 38 Bias Adjustment Setup

4-3-3. Bias Adjustments for "2" Position (Regular Tape)

12. This adjustment is the same as using the method described in 4-3-2 with the exceptions of following items.

Test tape:	MTT-501
BIAS/EQ switches:	"2" position
Adjustments:	VC303/VC301

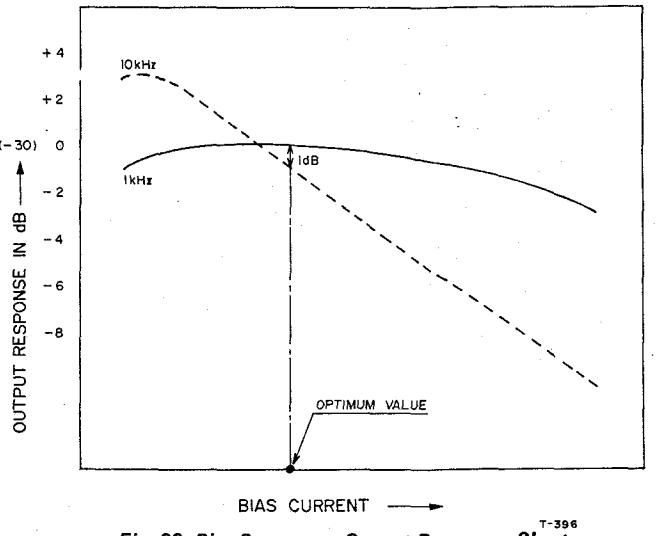


Fig. 39 Bias Current vs. Output Response Chart

NOTE: For actual adjustment/test point locations, see page 21.

4-3-4. Record Level Setting

For CrO_2 Tape:

13. Install a TEAC MTT-505 test tape on the deck.
14. Place the BIAS/EQ switches to the "1" positions.
15. Apply a 400 Hz test signal at −12 dB (194 mV) to the LINE IN jacks.
16. Place the deck in the record mode.
17. Rewind and play this recorded section on the tape.
18. Adjust VR105/VR205 to obtain 0 dB (0.775 V) on the VTVM. (Measured at OUTPUT jacks)
19. Continue the process of the recording-rewinding-playing-adjusting until this 0 dB (0.775 V) is obtained.

For Regular Tape:

20. Repeat the above procedure, with the following exceptions, for regular tape.

Test tape:	MTT-501
BIAS/EQ switches:	"2" position
Adjustments:	VR104/VR204

4-3-5. Distortion Checks

For CrO_2 Tape:

The distortion factor should be: 3.0% or less.

1. Connect a distortion analyzer to the OUTPUT jacks.
2. Connect an AF oscillator to the LINE IN jacks, through an attenuator.
3. Load a TEAC MTT-505 test tape on the deck.
4. Place the BIAS/EQ switches to the "1" positions.
5. Apply a 400 Hz test tone at −12 dB (194 mV).
6. Place the deck in the record mode.
7. Rewind and play this recorded section of the tape.
8. Read the indicated value on the distortion analyzer.
9. The distortion factor should be 3.0% or less.

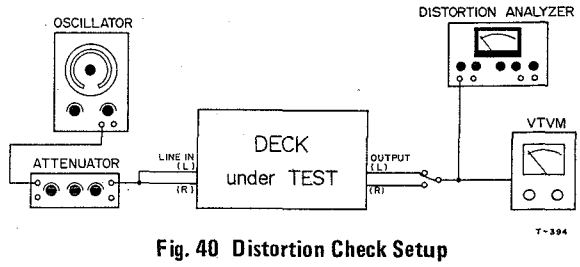


Fig. 40 Distortion Check Setup

For Regular Tape:

10. Repeat the above procedure, with the following exceptions, for regular tape.

Test tape:	MTT-501
BIAS/EQ switches:	"2" positions
Distortion factor:	**2.5% or less**

4-3-6. Overall Frequency Response

For CrO_2 Tape:

1. Connect an AF oscillator to the LINE IN jacks, through an attenuator, and a VTVM to the OUTPUT jacks.
2. Load a TEAC MTT-505 test tape on the deck.
3. Place the BIAS/EQ switches to the "1" positions.
4. Place the deck in the record mode.
5. Apply a test signal from 40 Hz to 12.5 kHz at −42 dB (6.15 mV).
6. Rewind and play this recorded section of the tape.
7. Make certain that the reading obtained on the VTVM are within the response limits.
8. In case of any deviation in the high frequency range of the response limits, clean the heads and if this cleaning is ineffective adjust L105/L205.

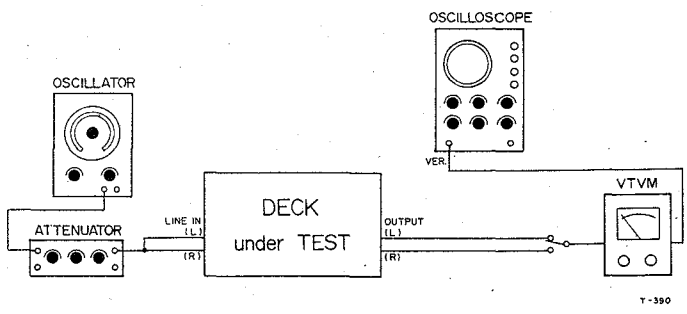


Fig. 41 Overall Frequency Response Check Setup

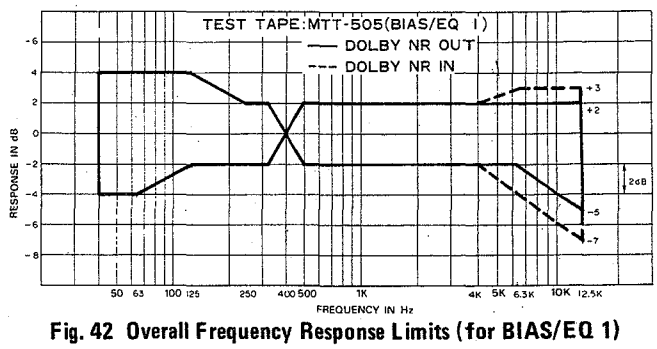


Fig. 42 Overall Frequency Response Limits (for BIAS/EQ 1)

NOTE: For actual adjustment/test point locations, see page 21.

For Regular Tape:

9. Repeat the above procedure, with the following exceptions, for regular tape.

Test tape:	MTT-501
BIAS/EQ switches:	"2" positions
Applied frequencies:	40 Hz ~ 10 kHz
Adjustments:	L104/L204

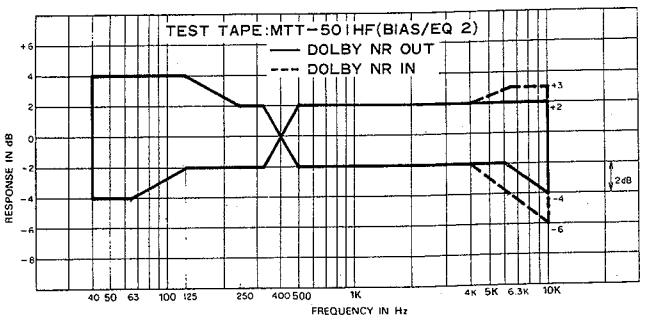


Fig. 43 Overall Frequency Response Limits (for BIAS/EQ 2)

4-3-7. Overall Signal-to-Noise Ratio

For CrO_2 Tape:

The overall S/N ratio should be: 45 dB (minimum)

1. Load a TEAC MTT-505 test tape on the deck.
2. Connect a VTVM to the OUTPUT jacks.
3. Place the BIAS/EQ switches to "1" positions.
4. Place the deck in the record mode with no signal applied.
5. Rewind and play this recorded section of the tape.
6. Read the indication on the VTVM.
7. The VTVM should indicate −42 dB minimum (6.15 mV maximum).
8. This −42 dB corresponds to the signal-to-noise ratio of 45 dB (minimum): the difference between residual noise of −42 dB (6.15 mV) and the specified output level +3 dB (1.09 V).

For Regular Tape:

The overall S/N ratio should be: 44 dB (minimum)

9. Repeat the above procedure, with the following exceptions, for regular tape.

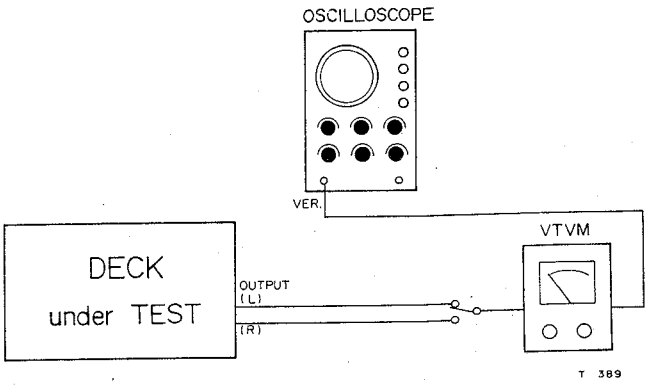


Fig. 44 Overall S/N Ratio Check Setup

Test tape:	MTT-501
BIAS/EQ switches:	"2" positions

10. The above specified value 44 dB corresponds to the reading of −41 dB (6.90 mV) obtained on the VTVM. That is, the specified signal-to-noise ratio means the difference between the residual noise and the specified output level, +3 dB (1.09 V).

4-3-8. Erase Efficiency

The differences should be: 65 dB (minimum)

NOTE

To measure erase efficiency, a 1 kHz narrow bandpass filter should be used. The test signal delivered from the AF oscillator should be tuned to the filter used.

1. Connect an AF oscillator to the LINE IN jacks, through an attenuator.
2. Connect a VTVM to the OUTPUT jacks, through a 1 kHz narrow bandpass filter.
3. Load a TEAC MTT-505 test tape on the deck.
4. Place the BIAS/EQ switches to the "1" positions.
5. Place the deck in the record mode.
6. Apply a 1 kHz signal at +1 dB (0.869 V).
7. Rewind the tape to the mid-point of the recording and remove the signal from the LINE IN jacks.

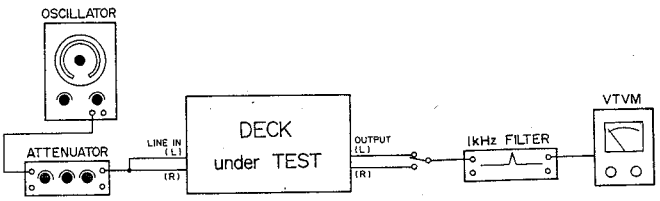


Fig. 45 Erase Efficiency Check Setup

8. Place the deck in the record mode and record through this previously recorded portion with no input signal applied.
9. Rewind the tape to the starting point of the 1 kHz signal recorded portion.
10. Play the tape and read the indication on the VTVM to obtain the output level of both the unerased portion and the erased portion of the recorded section.
11. Compare the indication differences between the 2 portions.
12. The differences should be 65 dB (minimum).

4-3-9. Channel Separation

The ratio should be: 30 dB (minimum)

NOTE

To check cross talk, a 1 kHz narrow bandpass filter should be used. The test signal delivered from an AF oscillator should be tuned to the filter used.

1. Connect an AF oscillator to the left channel LINE IN jack, through an attenuator.
2. Connect a VTVM to the right channel OUTPUT jack, through a 1 kHz bandpass filter.
3. Load a TEAC MTT-505 test tape on the deck.
4. Place the BIAS/EQ switches to "1" positions.
5. Apply a 1 kHz test tone at −9 dB (274 mV) into the left channel.

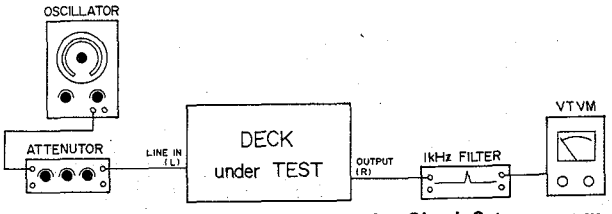


Fig. 46 Channel Separation Check Setup

6. Record 30 seconds of a 1 kHz signal.
7. Rewind the tape to the starting point of recording.
8. Play the tape and read the indication on the VTVM connected to the right channel OUTPUT jack.
9. The VTVM should indicate −27 dB minimum (34.5 mV maximum).
10. This corresponds to the channel separation of 30 dB minimum (with reference to the specified output level +3 dB, 1.09V).

4-3-10. Crosstalk between Adjacent Tracks

The ratio should be: 40 dB (minimum)

1. Connect an AF oscillator to the right channel LINE IN jack, through an attenuator.
2. Connect a VTVM to the right channel OUTPUT jack.
3. Load a TEAC MTT-505 test tape on the deck.
4. Place the BIAS/EQ switches to the "1" positions.
5. Apply a 125 Hz test signal at −9 dB (274 mV) into the right channel.
6. Make a recording of 30 seconds of a 125 Hz signal.
7. Remove the MTT-505 test tape, turn it over and replace it in the deck. Play the tape back.
8. While playing the tape, read the indication on the VTVM.
9. The VTVM should indicate −37 dB minimum (10.9 mV maximum).

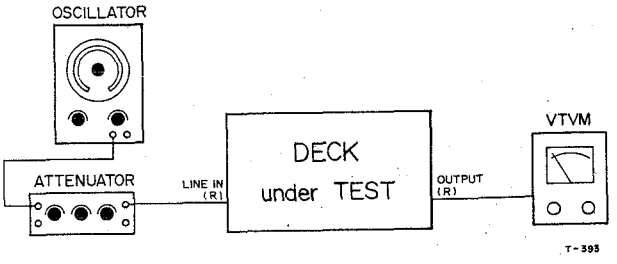


Fig. 47 Crosstalk Check Setup

10. This corresponds to the adjacent track cross talk of 40 dB minimum (with reference to the specified output level of +3 dB, 1.09 V).

NOTE

The tape must be completly erased or demagnetized prior to this procedure.

4-3-11. Dolby NR System Efficiency Checks

The variation at 1 kHz should be: 5.5 dB ± 2.5 dB
The variation at 10 kHz should be: 10 dB ± 2 dB

1. Connect an AF oscillator to the LINE IN jacks, through an attenuator.
2. Connect a VTVM to the OUTPUT jacks.
3. Load a TEAC MTT-505 test tape on the deck.
4. Place the BIAS/EQ switches to the "1" positions, and the DOLBY NR switch to the OUT position.
5. Apply a 1 kHz signal at −29 dB (27.4 mV).
6. Record this signal.
7. Rewind the tape to the starting point of the recorded section.
8. Play this recorded section of the tape.
9. While playing the 1 kHz signal, read the indication of the output level on the VTVM with the DOLBY NR switch at IN and OUT positions.
10. The output level should vary 5.5 dB ±2.5 dB between the IN and OUT positions. (The output level in the IN position should be lower than the OUT position.)

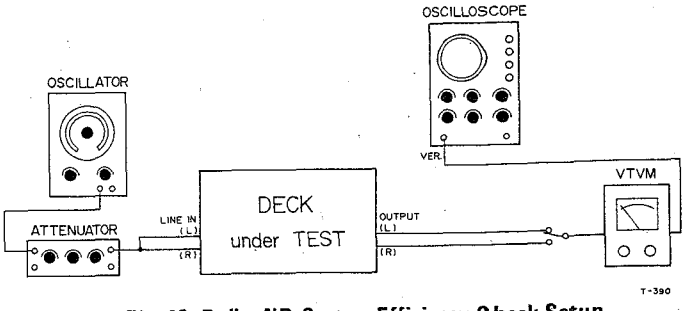


Fig. 48 Dolby NR System Efficiency Check Setup

11. Repeat the above procedure changing the applied test signal to 10 kHz at −39 dB (8.69 mV).
12. The variation should be 10 dB ± 2 dB. (The output level in the IN position should be lower than in the OUT position).

4-4. ADJUSTMENT & TEST POINT LOCATION

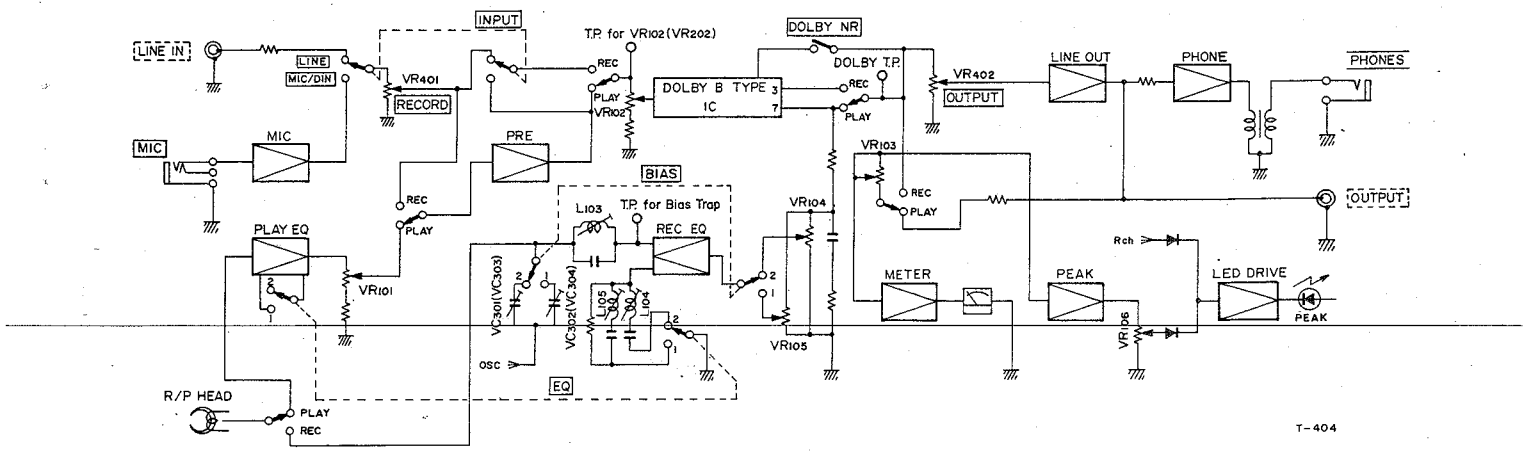


Fig. 49 Simplified Circuit Diagram

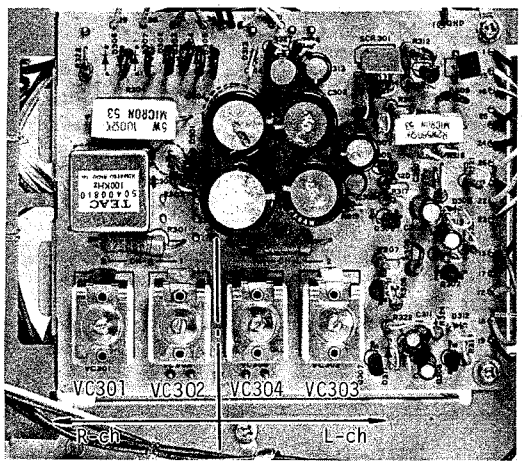


Fig. 50 Adjustment Location A

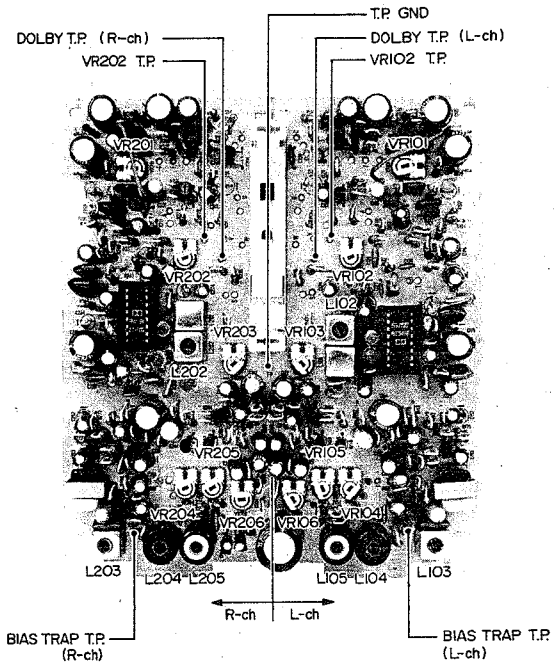
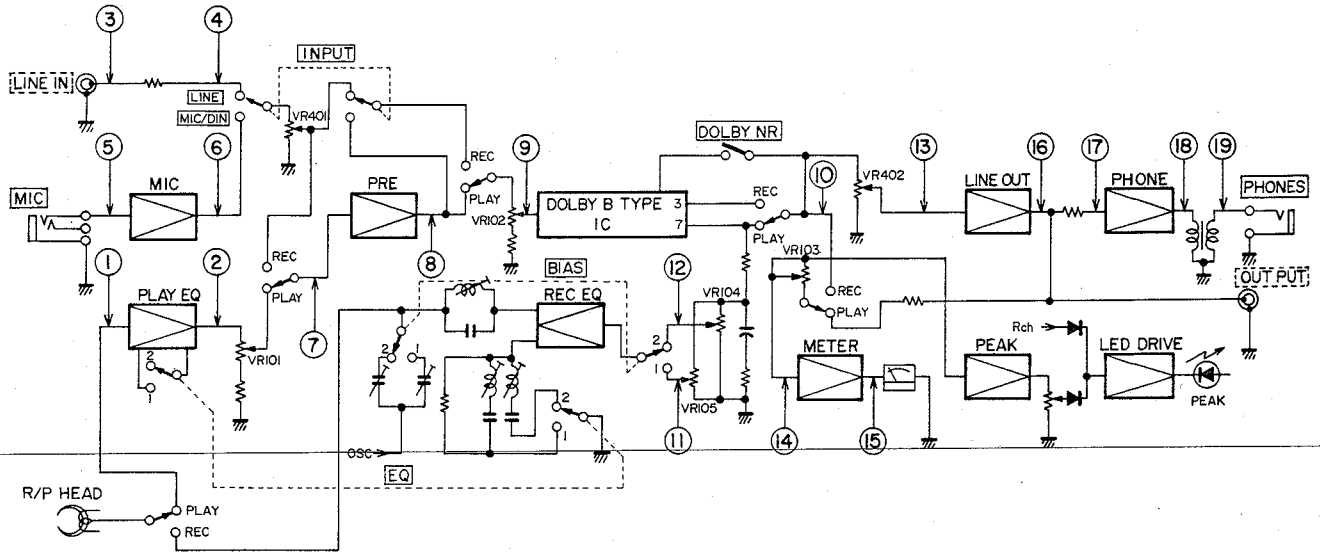


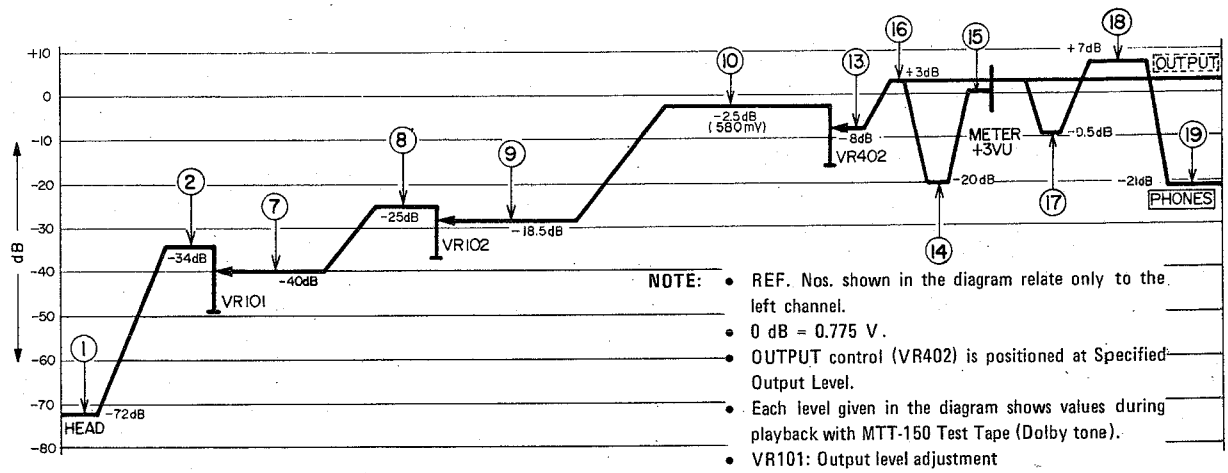
Fig. 51 Adjustment (and T.P.) Location B

VR101/VR201	Output level	L102/L202	MPX filter
VR102/VR202	Input level (Dolby calibration)	L103/L203	Bias trap
VR103/VR203	Level meter calibration	L104/L204	Record EQ (2)
VR104/VR204	Record level (2)	L105/L205	Record EQ (1)
VR105/VR205	Record level (1)	VC303/VC301	Bias (2)
VR106/VR206	Peak level indicator adjustment	VC304/VC302	Bias (1)

5. LEVEL DIAGRAM



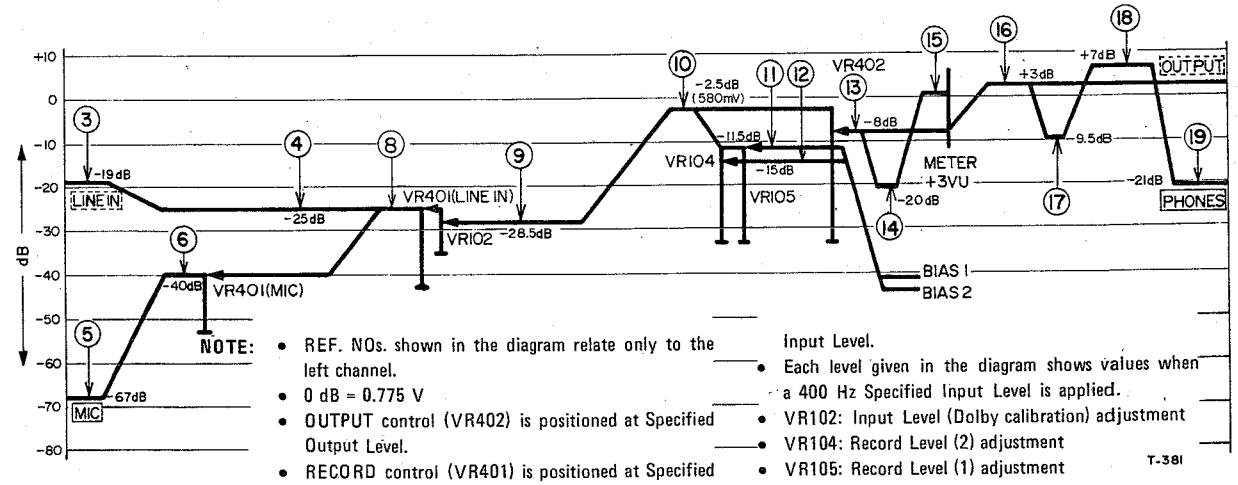
Playback Section



NOTE:

- REF. Nos. shown in the diagram relate only to the left channel.
- 0 dB = 0.775 V.
- OUTPUT control (VR402) is positioned at Specified Output Level.
- Each level given in the diagram shows values during playback with MTT-150 Test Tape (Dolby tone).
- VR101: Output level adjustment

Recording Section



NOTE:

- REF. NOs. shown in the diagram relate only to the left channel.
- 0 dB = 0.775 V
- OUTPUT control (VR402) is positioned at Specified Output Level.
- RECORD control (VR401) is positioned at Specified Input Level.
- Each level given in the diagram shows values when a 400 Hz Specified Input Level is applied.
- VR102: Input Level (Dolby calibration) adjustment
- VR104: Record Level (2) adjustment
- VR105: Record Level (1) adjustment

T-381

6. TROUBLE-SHOOTING

NOTE

REF. NO's indicated in the following table refer to the left channel, for the right channel REF. NO. identification, see schematic diagram.

TAPE TRANSPORT SECTION

1. Fuse blows when POWER is switched ON
   - Defective Power Transformer

2. Auto End-stop will not work in Play and/or Fast Wind.
   +B voltage not present between terminal A of SCR and GND.
   - Defective Resistor R313
   - Defective Diode D310

   Solenoid will not energize when SCR terminals A and K are switched ON.
   - Defective Switch S408
   - Defective Solenoid

   Solenoid will not work when SCR terminals A and G are shorted together.
   - Defective SCR

3. Tape winds onto Capstan Shaft.
   - Defective Pinch Roller
   - Defective Take-up Reel Table Assy
   - Idler slipping
   - Tape path wrong (improper Tape Guide position bad Head mounting)

4. Excessive Wow and Flutter
   - Defective Pinch Roller, Pinch Roller pressure incorrect
   - Capstan Belt stretched or oily

5. Capstan does not rotate
   - Capstan Belt off
   - Defective Motor

6. Index Counter will not count
   - Counter reset button not fully depressed.
   - Counter Belt off

AMPLIFIER SECTION

1. No sound in playback mode
   Noise (hum or clicking noise) appear when touching head wires.
   - Poor soldering of head terminations
   - Defective Head

   Sound can be heard during recording
   - Defective Switch S101
   - Defective Transistor Q103, Q104
   - Defective Parts associated with parts indicated above

   Sound cannot be heard during recording.
   - Defective Transistor Q101, Q102, Q103, Q104, Q105
   - Defective Dolby IC Unit
   - Defective Parts associated with parts indicated above

2. Level Meter will not indicate in playback mode.
   - Defective Level Meter
   - Defective Transistor Q108
   - Defective Semi-fixed Resistor VR103
   - Defective Parts associated with parts indicated above

3. Loss of high frequencies in playback mode
   High frequencies too low
   - Defective Transistor Q102
   - Playback equalizer circuit wrong

   High frequencies are several dB below specified response limits
   - Head dirty or defective

   Loss of high frequencies including level variation
   - Improper head-to-tape contact
   - Unstable functioning of tape transport mechanism

4. Poor playback signal-to-noise ratio
   Excessive hum – gets better when Capacitor C108 is removed.
   - Defective Head

   Excessive hum – reduced when changing Record/Playback PC Board's location
   - Defective Power Transformer

   Excessive white noise (hiss and circuit noise)
   - Defective Head
   - Defective Transistor Q103, Q104
   - Associated circuitry of Transistor Q103, Q104

   Wave form varies continuously
   - Defective Transistor Q103, Q104
   - Defective Capacitor C109, C113
   - Defective Parts associated with parts indicated above

5. Does not record
   Can record when changing Bias Switch setting
   - Defective Bias Switch
   - Defective Semi-fixed Resistor VR104, VR105
   - Defective Parts associated with parts indicated above

   Cannot erase, also
   - Bias Oscillator Assy faulty

   Can erase – sound from record monitor mode is normal
   - Head dirty
   - Defective Transistor Q107
   - Defective Switch S101
   - Defective Circuitry of Q107, S101

TEAC

TEAC CORPORATION 3-7-3, NAKA-CHO, MUSASHINO, TOKYO PHONE: (0422) 53-1111
TEAC CORPORATION OF AMERICA 7733 TELEGRAPH ROAD, MONTEBELLO, CALIFORNIA 90640 PHONE: (213) 726-030

PRINTED IN JAPAN 0378 KOS 0.5 D-232

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TEAC®

A-400

STEREO CASSETTE DECK

PARTS LIST

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PC BOARD SECTION

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PARTS ORDERING INFORMATION

Spare parts are available through your nearest TEAC Authorized Service Center or directly from the TEAC office, the address of which is written on the back cover. When ordering parts, always include the following information:

1. MODEL
2. REF. NO.
3. PARTS NO.
4. DESCRIPTION
5. UNIT SERIAL NO.
6. MANUAL CODE NO.

NOTICE REGARDING PARTS ORDERS

1. Do not order by only REF. NO.
2. In some instances, individual minor parts are not available. In such a case, the entire assembly including the part requested will be sent to you.

PARTS IDENTIFICATION CODING

Parts are identical between the different models with the exceptions as coded by the designations explained below.

DM	Domestic (Japan) market decks only.
TCA	TEAC Corporation of America, U.S.A. version only.
EUROPE	European market decks (except United Kingdom).
EX	All decks not specified above (incl. U.K.)

Effective: August 1975
CA-050

TEAC CORPORATION

5103162200

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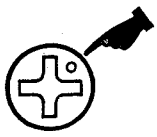
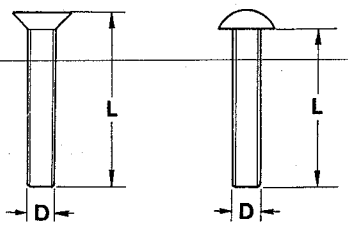
ASSEMBLING HARDWARE CODING L13T

All screws conform to ISO standards, and have cross-recessed heads, unless otherwise noted.
ISO screws have the head inscribed with a point as in the figure to the right.



FOR EXAMPLE:

B M3 x 6
- Length in mm (L)
- Diameter in mm (D)
- Type of Head



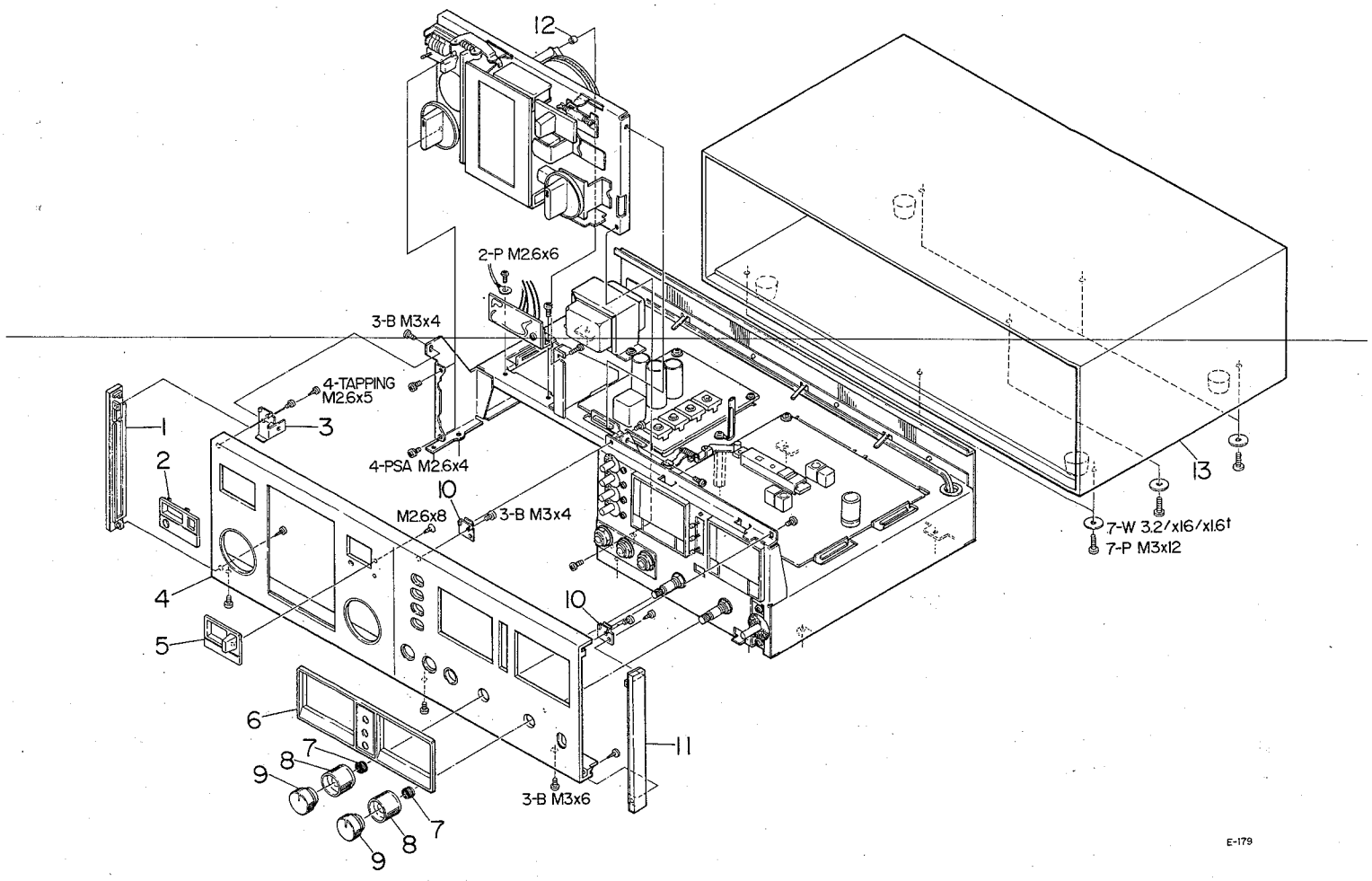
	Code	Full Name	Type
MACHINE SCREW	R	Round Head Screw	
	P	Pan Head Screw	
	T	Stove Head Screw (Truss)	
	B	Binding Head Screw	
	F	Flat Countersunk Head Screw	
	O	Oval Countersunk Head Screw	
WOOD SCREW	RW	Round Head Wood Screw	
	FW	Flat Countersunk Wood Screw	
	OW	Oval Countersunk Wood Screw	
SEMS SCREW	BSA	Binding Head SEMS Screw(A Type)	
	BSB	Binding Head SEMS Screw(B Type)	
	BSF	Binding Head SEMS Screw(F Type)	
	PSA	Pan Head SEMS Screw(A Type)	
	PSB	Pan Head SEMS Screw(B Type)	

	Code	Full Name	Type
TAPPING SCREW	BTA	Binding Head Tapping Screw(A Type)	
	BTB	Binding Head Tapping Screw(B Type)	
	RTA	Round Head Tapping Screw(A Type)	
	RTB	Round Head Tapping Screw(B Type)	
SETSCREW	SF	Hex Socket Setscrew(Flat Point)	
	SC	Hex Socket Setscrew(Cup Point)	
	SS	Slotted Socket Setscrew(Flat Point)	
WASHER	E	E-Ring (Retaining Washer)	
	W	Flat Washer (Plain)	
	SW	Lock Washer (Spring)	
	LWI	Lock Washer (Internal Teeth)	
	LWE	Lock Washer (External Teeth)	
	TW	Trim Washer (Countersunk)	
NUT	N	Hex Nut	

T-310

EXPLODED VIEWS AND PARTS LIST

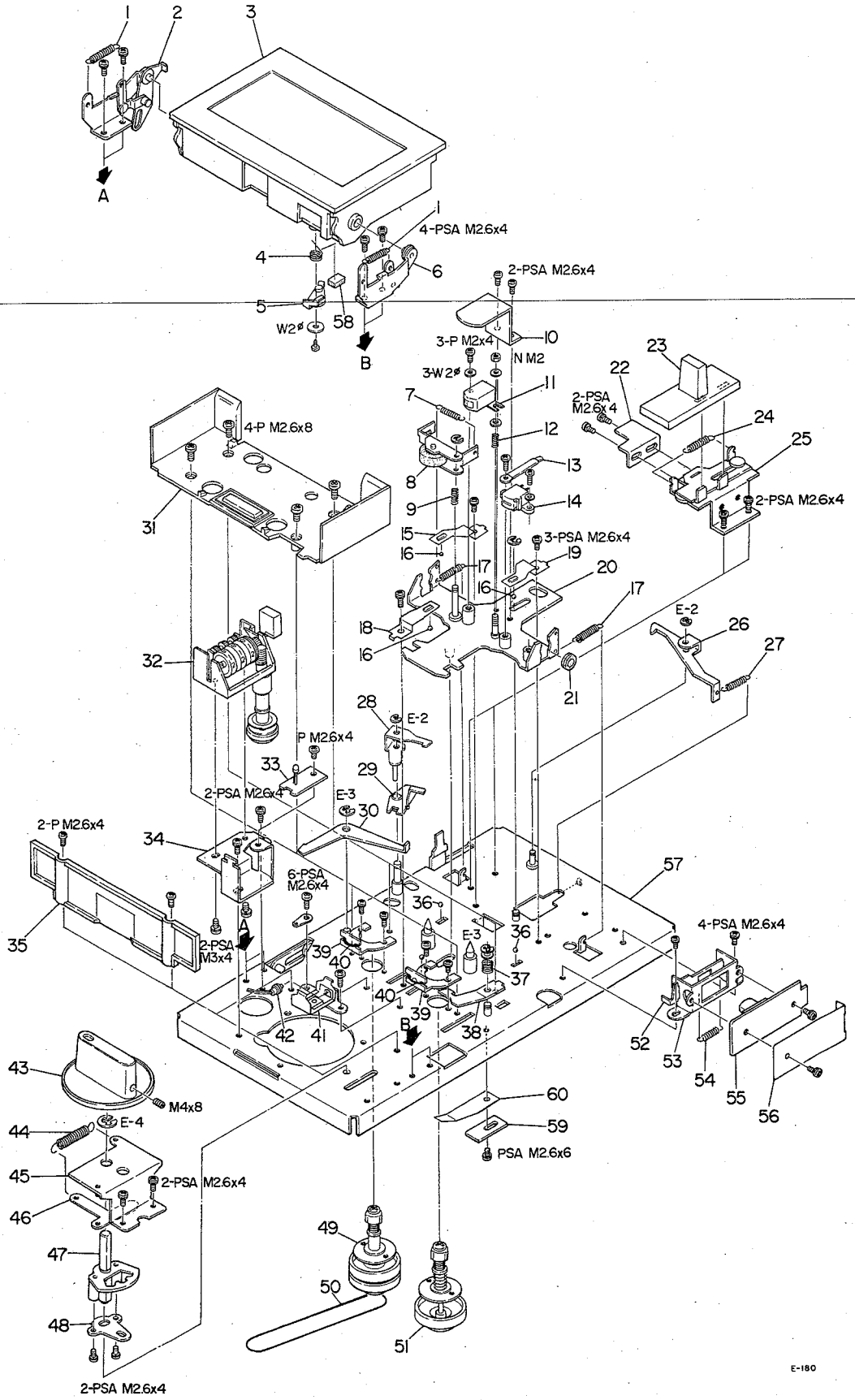
1. BASIC DISASSEMBLY



NOTE: Parts marked with * require longer delivery time than regular parts.

REF. NO.		PARTS NO.	DESCRIPTION	REMARKS
1- 1	*	55330130	Sash, Side; Right	
1- 2	*	55330160	Cover, Inbex Counter	
1- 3	*	55544280	Bracket, Trim Panel; Left	
1- 4	*	55020400	Panel, Front	
1- 5	*	55341200	Cover, Eject Knob	
1- 6	*	55320110	Escutcheon, VU Meter	
1- 7		55202651	Spring, Helical	
1- 8		55041750	Knob, Var. Res.; A	
1- 9		55041760	Knob, Var. Res.; B	
1-10	*	55544290	Bracket, Trim Panel; Right	
1-11	*	55330120	Sash, Side; Left	
1-12	*	55442000	Spacer, Angle	
1-13	*	55010091	Cabinet	

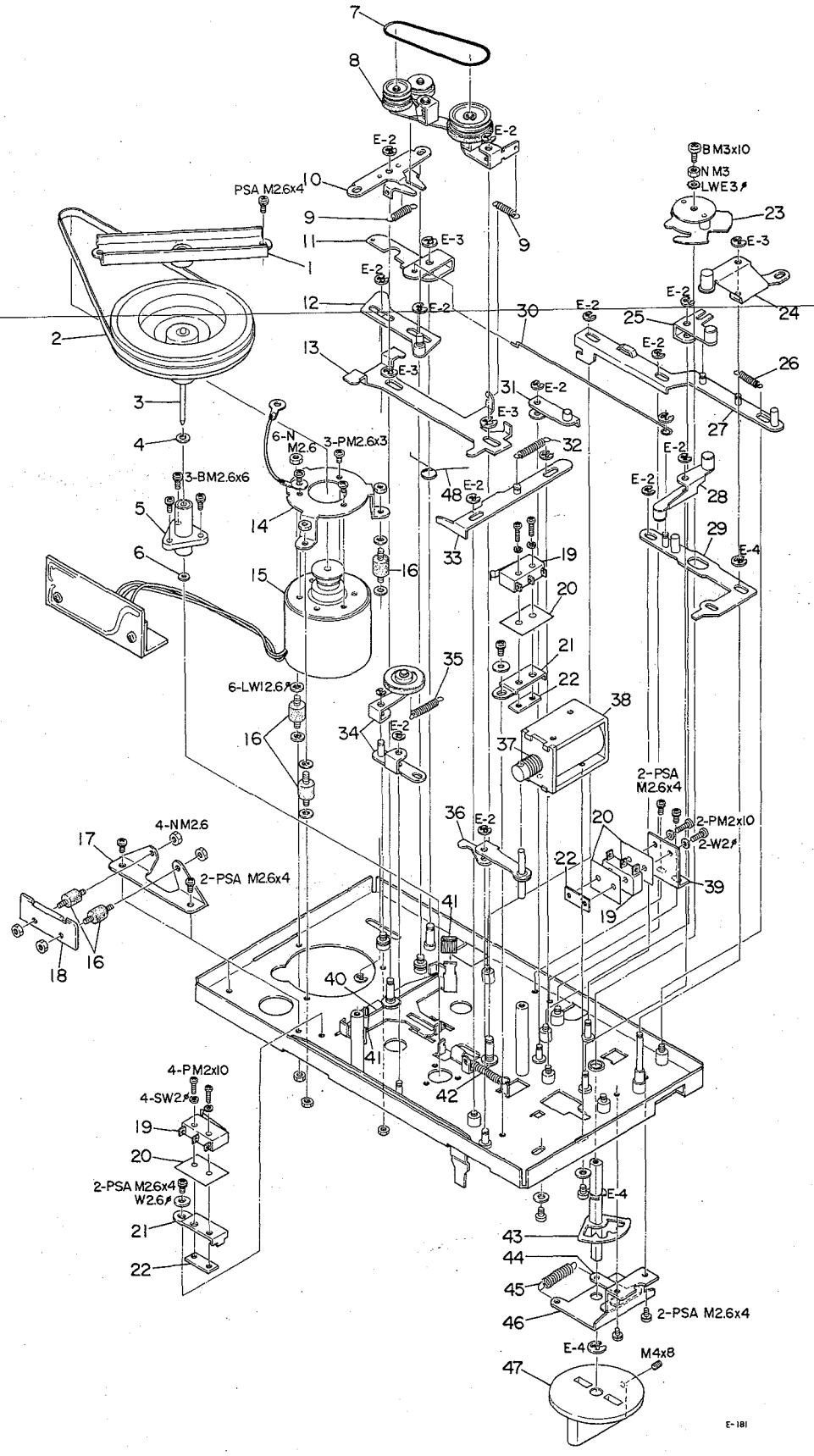
2. TRANSPORT SECTION A



NOTE: Parts marked with * require longer delivery time than regular parts.

REF. NO.		PARTS NO.	DESCRIPTION	REMARKS
2- 1		55202490	Spring, Cassette Holder Bracket Assy	
2- 2	*	55042151	Bracket Assy, Cassette Holder; A	
2- 3		55040892	Holder Assy, Cassette	
2- 4		55202502	Spring, Record Mode Lock Out	
2- 5	*	55042250	Plate Assy, Record Mode Lock Out; A	
2- 6	*	55042160	Bracket Assy, Cassette Holder; B	
2- 7		55202310	Spring, Pinch Roller Pressure	
2- 8		55041850	Pinch Roller Assy	
2- 9		55202300	Spring, Pinch Roller	
2-10	*	55544380	Protector, Head	
2-11		50660210	Head, Record/Playback	
2-12		55202291	Spring, Head	
2-13	*	50831921	Retainer, Head Reads	
2-14		50660470	Head, Erase	
2-15	*	55202530	Plate Spring, B	
2-16	*	55400550	Steel Bearing, 2ϕ	
2-17		55202320	Spring, Head Base	
2-18	*	55202540	Plate Spring, C	
2-19	*	55202520	Plate Spring, A	
2-20	*	55041840	Plate Assy, Head Base	
2-21	*	55340980	Strain Relief	
2-22	*	55544460	Plate, Eject Stopper	
2-23		55330140	Lever, Eject	
2-24		55202480	Spring, Eject Lever	
2-25	*	55042141	Plate Assy, Eject	
2-26	*	55543950	Arm, Latch	
2-27		55202360	Spring, Lock Lever	
2-28	*	55040970	Lever Assy, Pause; A	
2-29	*	55040980	Lever Assy, Pause; B	
2-30	*	55543880	Lever, Eject Control	
2-31	*	55040901	Guide Plate Assy, Cassette; A	
2-32		55042190	Counter Assy, Index	
2-33	*	51681940	PC Board Assy, LED; A	
		51430470	Diode, Light Emitting (Red)	
2-34	*	55544010	Plate, Counter Assy	
2-35	*	55330151	Cassette Guide, B	
2-36	*	55400560	Steel Bearing, 3ϕ	
2-37		55202420	Spring, Record Mode Lock Out	
2-38	*	55544071	Lever, Record Mode Lock Out	
2-39	*	55544410	Plate, Cassette Holder Stopper	
2-40	*	55302510	"O" Ring (P-4)	
2-41	*	55042170	Holder Assy, Lamp	
2-42		51420890	Lamp	
2-43		55341250	Lever, Rotary	
2-44		55202280	Spring, Lock	
2-45	*	55041790	Switch Holder Assy	
2-46	*	55041800	Plate Assy, Lock	
2-47	*	55042051	Cam Assy, Lock; B	
2-48	*	55544360	Plate, Lock Actuator	
2-49		55041932	Reel Table Assy, T	
2-50		55341100	Belt, Index Counter	
2-51		55041952	Reel Table Assy, S	
2-52	*	55543870	Plate, Switch Actuator	
2-53	*	55543860	Plate, Switch Mounting; A	
2-54		55202330	Spring, Switch Return	
2-55	*	51681930	PC Board Assy, Muting Switch	
		50444141	Switch, Slide	
2-56	*	55544340	Insulator Plate, A	
2-57	*	55020391	Chassis Assy	
2-58	*	55341370	Stopper	
2-59	*	55544420	Plate, Adjusting	
2-60		55202640	Spring, Adjusting	

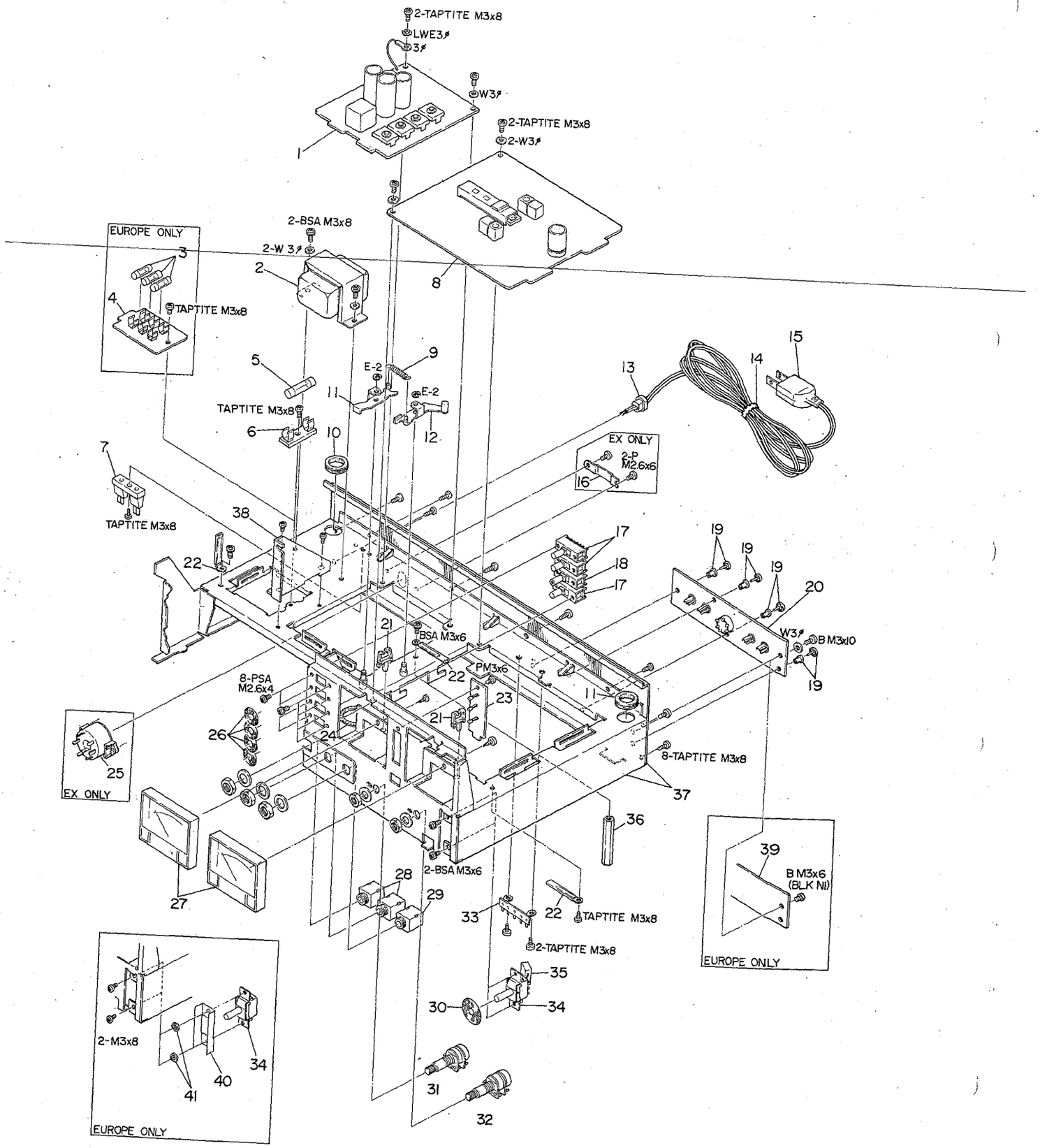
3. TRANSPORT SECTION B



NOTE: Parts marked with * require longer delivery time than regular parts.

REF. NO.		PARTS NO.	DESCRIPTION	REMARKS
3- 1	*	55040860	Plate Assy, Flywheel Bearing	
3- 2		55340990	Belt, Capstan	
3- 3		55042490	Flywheel Assy	
3- 4	*	55544320	Washer, Thrust	
3- 5		55042230	Capstan Housing Assy	
3- 6	*	55341300	Washer, Oil Retaining	
3- 7		55341350	Belt, Fast Wind	
3- 8	*	55042243	Idler Lever Assy, Fast Wind	
3- 9		55202450	Spring, Fast Wind Actuator	
3-10	*	55042070	Arm Assy, Fast Wind Actuator	
3-11	*	55544440	Arm, Safety	
3-12	*	55042060	Plate Assy, Fast Wind Actuator	
3-13	*	55544100	Plate, Fast Wind	
3-14	*	55544000	Plate, Mount.; DC Motor	
3-15		71051070	DC Motor Assy	
3-16		71111900	Cushion, Rubber	
3-17	*	55544020	Plate, Reed Switch	
3-18	*	51681890	PC Board Assy, Reed Switch	
		50447350	Switch, Reed	
3-19		50446540	Switch, Micro	
3-20	*	55544350	Insulator Plate, B	
3-21	*	55543921	Plate, Micro Switch; B	
3-22	*	55544470	Plate, Micro Switch	
3-23	*	55041820	Cam Assy, Rotary Lever	
3-24	*	55042040	Lever Assy, Record Actuator; B	
3-25	*	55042030	Lever Assy, Record Actuator; A	
3-26		55202410	Spring, Record Lever	
3-27	*	55042020	Plate Assy, Record	
3-28	*	55041830	Lever Assy, Head Base Actuator	
3-29	*	55041910	Plate Assy, Pause Release	
3-30	*	55202630	Wire Linkage	
3-31	*	55041890	Lever Assy, Pause	
3-32		55202340	Spring, Pause Plate Assy	
3-33	*	55041880	Plate Assy, Pause	
3-34	*	55041961	Play Idler Lever Assy	
		55041990	Play Idler Assy	
3-35		55202400	Spring, Idler	
3-36	*	55041900	Lever Assy, Pause Plate Actuator	
3-37		55202350	Spring, Solenoid	
3-38		51630060	Solenoid	
3-39	*	55544041	Plate, Micro Switch; C	
3-40		55202470	Spring, Brake	
3-41		55341161	Brake Shoe	
3-42		55202441	Spring, Fast Wind Plate	
3-43	*	55041811	Cam Assy, Lock; A	
3-44		55202280	Plate Assy, Lock	
3-45	*	55041800	Spring, Lock	
3-46	*	55041790	Switch Holder Assy	
3-47		55341250	Lever, Rotary	
3-48		55202560	Spring, Idler; B	

4. MAIN CHASSIS



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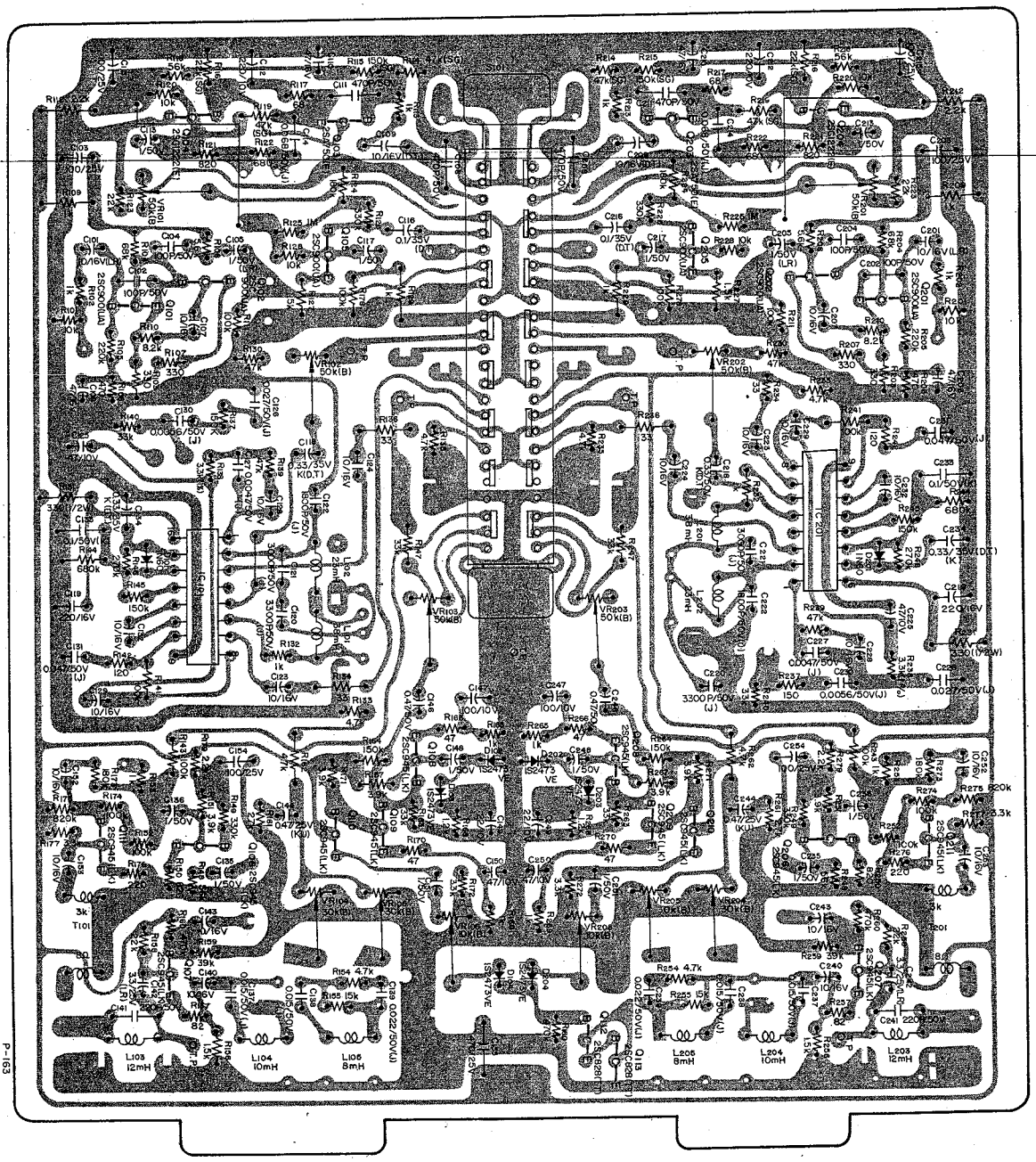
NOTE: Parts marked with * require longer delivery time than regular parts.

REF. NO.	PARTS NO.	DESCRIPTION	REMARKS
4- 1	51681912	PC Board Assy, Power Supply	DM, EX, TCA
	51681972	PC Board Assy, Power Supply	EUROPE
4- 2	* 51420880	Transformer, Power	DM, TCA
	* 51520390	Transformer, Power	EX
	* 51520400	Transformer, Power	EUROPE
4- 3	* 51520410	Fuse, Miniature; 250mA 250V	EUROPE
4- 4	* 51681950	PC Board Assy, Fuse	EUROPE
4- 5	50411130	Fuse, 0,5A	DM, EX
	50411460	Fuse, 0,5A —250V	TCA
4- 6	* 50412340	Holder, Fuse	DM, EX, TCA
4- 7	* 50438350	Terminal Strip, 2P	
4- 8	51681907	PC Board Assy, Record/Playback Ampl.	
4- 9	55202510	Spring R/P Mode Selector	
4-10	* 55341190	Bushing, Rubber	
4-11	* 55544260	Lever, Record; B	
4-12	* 55042180	Lever Assy, Record; C	
4-13	* 55300470	Strain Relief, AC Cord	DM, EX, TCA
4-14	* 50090240	Strap, Binding	
4-15	* 50471652	Cord, AC Power	DM, EX
	* 50471661	Cord, AC Power	TCA
	* 51280170	Cord, AC Power	EUROPE
4-16	* 55541690	Plate, Voltage Selector	EX
4-17	51310320	SW, Slide	
4-18	51310330	SW, Slide	
4-19	* 55341180	Push Rivet	
4-20	* 50451330	Terminal Assy	
4-21	* 50332580	Clamp, Wire; E	
4-22	* 55544250	Clamp, Wire; G	
4-23	* 51681920	PC Board Assy, LED; C	
	51430470	Diode, Light Emitting (Red)	
	51430480	Diode, Light Emitting (Orange)	
4-24	* 55332850	Grommet, Plastic	
4-25	* 51310070	Voltage Selector	EX
4-26	* 55544330	Mask, Slide Switch	
4-27	51650020	VU Meter	
4-28	50432970	Jack, Phone; Single (MIC)	
4-29	50432980	Jack, Phone; 3 cond (PHONES)	
4-30	* 55500790	Mask, Power Switch	
4-31	51501150	Var. Res., 100kΩ—Ax2	
4-32	51501160	Var. Res., 10kΩ—Ax2	
4-33	* 50452531	Terminal Strip (2L 3P)	
4-34	50447320	Switch, Lever (POWER)	DM, EX
	50447330	Switch, Lever (POWER)	TCA
	51380030	Switch, Lever (POWER)	EUROPE
4-35	50529050	Spark Killer, 0,1μF+120Ω	DM
	50529060	Spark Killer, 0,1μF+120Ω	TCA
	50529070	Spark Killer, 0,01μF+300Ω	EX
	51890010	Spark Killer, 4700pF	EUROPE
4-36	* 55441890	Stud	
4-37	* 55010072	Chassis Assy, Main	DM, TCA, EUROPE
	* 55010102	Chassis Assy, Main	EX
4-38	* 55544550	Angle, Reinforcing	
4-39	* 50451340	Terminal Assy	EUROPE
4-40	* 55544540	Insulator Plate, Switch	
4-41	* 55800010	Washer, Insulator	

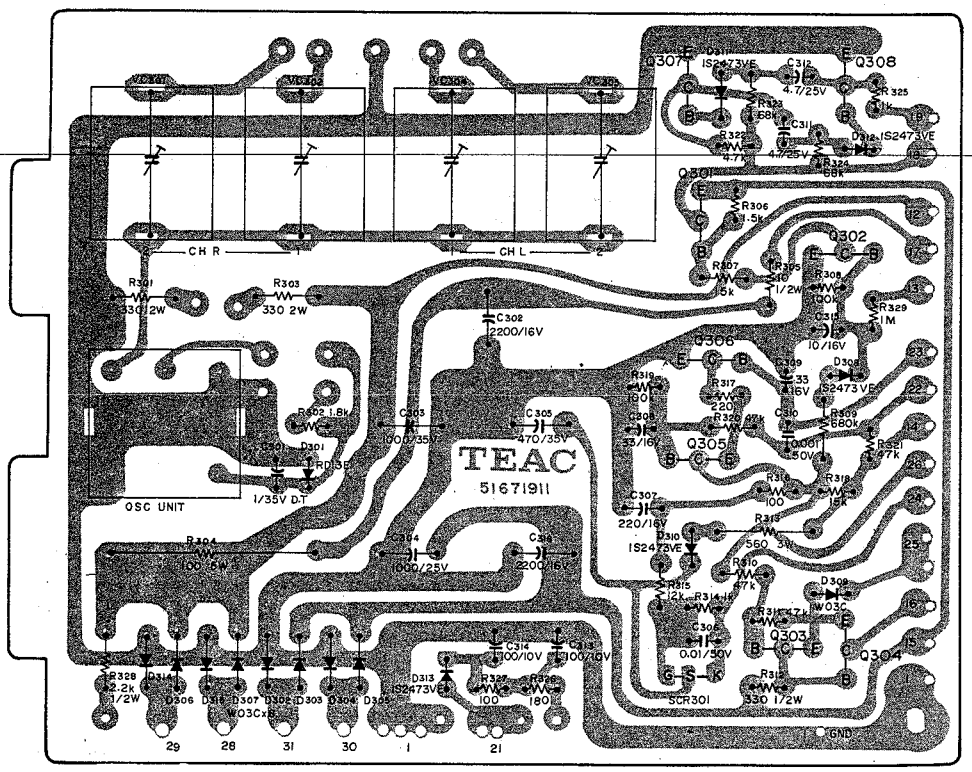
PC BOARD SECTION (Diagram)

1. RECORD/PLAYBACK AMPLIFIER



FOIL SIDE

2. POWER SUPPLY



FOIL SIDE

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INCLUDED ACCESSORIES

REF. NO.	PARTS NO.	DESCRIPTION	REMARKS
	51280010	Cords, Input-output Connection, 2 used	
	57100300	Cleaning Stick (TZ-275)	
	50291350	Silicone Cloth	
	50411130	Fuse, 0.5A	EX
	51013470	A-400 Owner's Manual	DM
	51013480	A-400 Owner's Manual	EX, EUROPE
	51013490	A-400 Owner's Manual	TCA
	51013450	Information Supplement, Cassette	

PC BOARD SECTION (Parts List)

1. RECORD/PLAYBACK AMPLIFIER

REF. NO.	PARTS NO.	DESCRIPTION
	51681907	PC Bd. Assy
	51671900	PC Board (only)
	DOLBY IC's	
IC101/IC201	50427280	NE545B
	TRANSISTORS	
Q101/Q201	51450340	2SC900(UA)
Q102/Q202	51450340	2SC900(UA)
Q103/Q203	51450380	2SA750(E)
Q104/Q204	50424950	2SC1222(E)
Q105/Q205	51450340	2SC900(UA)
Q106/Q206	51450360	2SC945(LK)
Q107/Q207	51450360	2SC945(LK)
Q108/Q208	51450360	2SC945(LK)
Q109/Q209	51450360	2SC945(LK)
Q110/Q210	51450360	2SC945(LK)
Q111/Q211	51450360	2SC945(LK)
Q112	50424840	2SC828(T.T)
Q113	50424840	2SC828(T.T)
	DIODES	
D101/D201	50422130	Germanium, 1N60
D102/D202	50425170	Silicon, 1S2473VE
D103/D203	50425170	Silicon, 1S2473VE
D104/D204	50425170	Silicon, 1S2473VE

CARBON RESISTORS

All resitors are rated ±5% tolerance and 1/4 watt unless otherwise noted.

R101/R201	50571060	10kΩ	
R102/R202	50570820	1kΩ	
R103/R203	50570700	330Ω	
R104/R204	50571260	68kΩ	
R105/R205	50571380	220kΩ	
R106/R206	50570740	470Ω	
R107/R207	50570700	330Ω	
R108/R208	50571000	5.6kΩ	
R109/R209	50570820	1kΩ	
R110/R210	50571040	8.2kΩ	
R111/R211	50571300	100kΩ	
R112/R212	50570900	2.2kΩ	
R113/R213	50570820	1kΩ	
R114/R214	50571221	47kΩ	(SG)
R115/R215	50571341	150kΩ	(SG)
R116/R216	50571141	22kΩ	(SG)
R117/R217	50570540	68Ω	
R118/R218	50571240	56kΩ	
R119/R219	50571221	47kΩ	(SG)
R120/R220	50571060	10kΩ	
R121/R221	50570800	820Ω	
R122/R222	50570780	680Ω	
R123/R223	50571140	22kΩ	
R124/R224	50571360	180kΩ	
R125/R225	50571540	1MΩ	
R126/R226	50571420	330kΩ	
R127/R227	50570860	1.5kΩ	
R128/R228	50571060	10kΩ	
R129/R229	50570820	1kΩ	
R130/R230	50571220	47kΩ	
R131/R231	50574700	330Ω	1/2W 10%
R132/R232	50570820	1kΩ	
R133/R233	50570980	4.7kΩ	
R134/R234	50570460	33Ω	
R135/R235	50570980	4.7kΩ	
R136/R236	50570460	33Ω	
R137/R237	50570620	150Ω	
R138/R238	50529630	3.3kΩ	1/2W 1%
R139/R239	50571220	47kΩ	
R140/R240	50571180	33kΩ	
R141/R241	50571300	100kΩ	
R142/R242	50570600	120Ω	
R143/R243	50571300	100kΩ	
R144/R244	50571500	680kΩ	
R145/R245	50571340	150kΩ	
R146/R246	50571400	270kΩ	
R147/R247	50571180	33kΩ	
R148/R248	50571240	56kΩ	
R149/R249	50571420	330kΩ	
R150/R250	50570800	820Ω	
R151/R251	50570960	3.9kΩ	
R152/R252	50571300	100kΩ	
R153/R253	50570820	1kΩ	
R154/R254	50570980	4.7kΩ	
R155/R255	50571100	15kΩ	
R156/R256	50570860	1.5kΩ	
R157/R257	50570560	82Ω	
R158/R258	50571140	22kΩ	
R159/R259	50571200	39kΩ	
R160/R260	50571460	470kΩ	
R161/R261	50570920	2.7kΩ	
R162/R262	50570980	4.7kΩ	
R163/R263	50571180	33kΩ	
R164/R264	50571340	150kΩ	
R165/R265	50570820	1kΩ	
R166/R266	50570500	47Ω	
R167/R267	50570960	3.9kΩ	
R168/R268	50570840	1.2kΩ	
R169/R269	50570820	1kΩ	
R170/R270	50570500	47Ω	
R171/R271	50570960	3.9kΩ	
R172/R272	50570940	3.3kΩ	
R173/R273	50571360	180kΩ	
R174/R274	50571300	100kΩ	
R175/R275	50571520	820kΩ	
R176/R276	50570660	220Ω	
R177/R277	50570940	3.3kΩ	
R178/R278	50571300	100kΩ	
R179/R279	50570900	2.2kΩ	
R180	50571460	470kΩ	

CAPACITORS

C101/C201	51700770	Elec.	10μF	16V	(LR)
C102/C202	50547440	Dip. Mica	100pF	50V	
C103/C203	50554170	Elec.	100μF	25V	
C104/C204	50547440	Dip. Mica	100pF	50V	

REF. NO.	PARTS NO.	DESCRIPTION			
C105/C205	51700860	Elec.	1μF	50V	(LR)
C106/C206	50555540	Elec.	47μF	10V	
C107/C207	50554050	Elec.	10μF	16V	
C108/C208	50547560	Dip. Mica	470pF	50V	
C109/C209	50546562	Dip. Tant.	10μF	16V	
C110/C210	50554010	Elec.	47μF	16V	
C111/C211	50547560	Dip. Mica	470pF	50V	
C112/C212	50554910	Elec.	220μF	10V	
C113/C213	50554540	Elec.	1μF	50V	
C114/C214	50549260	Mylar	0,068μF	50V	5%
C115/C215	50554170	Elec.	100μF	25V	
C116/C216	50546642	Dip. Tant.	0.1μF	35V	
C117/C217	50554540	Elec.	1μF	50V	
C118/C218	51703000	Dip. Tant.	0.33μF	35V	10%
C119/C219	50554390	Elec.	220μF	16V	
C120/C220	50596800	Polyst.	3300pF	50V	5%
C121/C221	50596810	Polyst.	3000pF	50V	5%
C122/C222	50543990	Polyst.	1800pF	50V	5%
C123/C223	50554050	Elec.	10μF	16V	
C124/C224	50554050	Elec.	10μF	16V	
C125/C225	50555540	Elec.	47μF	10V	
C126/C226	50548990	Mylar	0.027μF	50V	5%
C127/C227	50548910	Mylar	0.0047μF	50V	5%
C128/C228	50554050	Elec.	10μF	16V	
C129/C229	50554050	Elec.	10μF	16V	
C130/C230	50548920	Mylar	0.0056μF	50V	5%
C131/C231	50547380	Mylar	0.047μF	50V	5%
C132/C232	50554050	Elec.	10μF	16V	
C133/C233	50548040	Mylar	0.1μF	50V	10%
C134/C234	51703000	Dip. Tant.	0.33μF	35V	10%
C135/C235	50554540	Elec.	1μF	50V	
C136/C236	50554540	Elec.	1μF	50V	
C137/C237	50548870	Mylar	0.015μF	50V	5%
C138/C238	50548870	Mylar	0.015μF	50V	5%
C139/C239	50548980	Mylar	0.022μF	50V	5%
C140/C240	50554050	Elec.	10μF	16V	
C141/C241	50547450	Dip. Mica	220pF	50V	
C142/C242	51700800	Elec.	3.3μF	25V	(LR)
C143/C243	50554050	Elec.	10μF	16V	
C144/C244	50549650	Elec.	0.47μF	25V	(KU)
C145/C245		(not used)			
C146/C246	50554970	Elec.	0.47μF	50V	
C147/C247	50554570	Elec.	100μF	10V	
C148/C248	50554540	Elec.	1μF	50V	
C149/C249	50554720	Elec.	22μF	10V	
C150/C250	50555540	Elec.	47μF	10V	
C151/C251	50554540	Elec.	1μF	50V	
C152/C252	50554050	Elec.	10μF	16V	
C153/C253	50554050	Elec.	10μF	16V	
C154/C254	50554170	Elec.	100μF	25V	
C155	50554420	Elec.	470μF	25V	

VARIABLE RESISTORS

VR101/VR201	51500570	Semi-ficed,	50kΩ-B
VR102/VR202	51500570	Semi-fixed,	50kΩ-B
VR103/VR203	51500570	Semi-fixed,	50kΩ-B
VR104/VR204	51500590	Semi-fixed,	30kΩ-B
VR105/VR205	51500590	Semi-fixed,	30kΩ-B
VR106/VR206	51500560	Semi-fixed,	10kΩ-B

REF. NO.	PARTS NO.	DESCRIPTION	
		COILS/TRANSFORMERS	
L101/L201	50566660	Coil, Choke;	38mH 5%
L102/L202	50566650	Coil Semi-fixed Choke;	23mH
L103/L203	50566550	Coil Trap;	12mH
L104/L204	50562630	Coil, Record EQ;	10mH
L105/L205	50566350	Coil, Record EQ;	8mH
T101/T201	50562260	Transformer, Output	3kΩ:8Ω
		MISCELLANEOUS	
S101	51310290	Switch, Slide; 16PDT	
	57240420	Pin, F3 Type	
	51470160	Socket, IC; 16P	

2. POWER SUPPLY

REF. NO.	PARTS NO.	DESCRIPTION
	51681912	PC Bd. Assy (DM, EX, TCA)
	51681972	PC Bd. Assy (EUROPE)
	51671911	PC Board (only)
		SCR
SCR301	51430900	2P1M
		TRANSISTORS
Q301	51450390	2SA539 (L)
Q302	51450360	2SC945 (LK)
Q303	51450360	2SC945 (LK)
Q304	51450400	2SD471 (L)
Q305 ~ Q308	51450360	2SC945 (LK)
		DIODES
D301	51430860	Zener, RD13E 3%
D302 ~ D307	51430890	Silicon, W03C
D308	50425170	Silicon, 1S2473VE
D309	51430890	Silicon, W03C
D310 ~ D313	50425170	Silicon, 1S2473VE
D314, D315	51430890	Silicon, W03C (EUROPE)
		RESISTORS
R301	51806700	Wire Wound 330Ω 2W
R302	50570880	Carbon 1.8kΩ 1/4W 5%
R303	51806700	Wire Wound 330Ω 2W
R304	50520290	Cement 100Ω 5W
R305	50517891	Carbon 10Ω 1/2W 5%
R306	50570860	Carbon 1.5kΩ 1/4W 5%
R307	50571100	Carbon 15kΩ 1/4W 5%

REF. NO.	PARTS NO.	DESCRIPTION			
R308	50571300	Carbon	100kΩ	1/4W	5%
R309	50571500	Carbon	680kΩ	1/4W	5%
R310, R311	50571220	Carbon	47kΩ	1/4W	5%
R312	50517900	Carbon	330Ω	1/2W	5%
R313	51807760	Wire Wound	560Ω	3W	
R314	50570820	Carbon	1kΩ	1/4W	5%
R315	50571080	Carbon	12kΩ	1/4W	5%
R316	50570580	Carbon	100Ω	1/4W	5%
R317	50570660	Carbon	220Ω	1/4W	5%
R318	50571100	Carbon	15kΩ	1/4W	5%
R319	50571300	Carbon	100kΩ	1/4W	5%
R320, R321	50571220	Carbon	47kΩ	1/4W	5%
R322	50570980	Carbon	4.7kΩ	1/4W	5%
R323, R324	50571260	Carbon	68kΩ	1/4W	5%
R325	50570820	Carbon	1kΩ	1/4W	5%
R326	50570640	Carbon	180Ω	1/4W	5%
R327	50570580	Carbon	100Ω	1/4W	5%
R328	50517860	Carbon	2.2kΩ	1/2W	5%
R329	50571540	Carbon	1MΩ	1/4W	5%

CAPACITORS

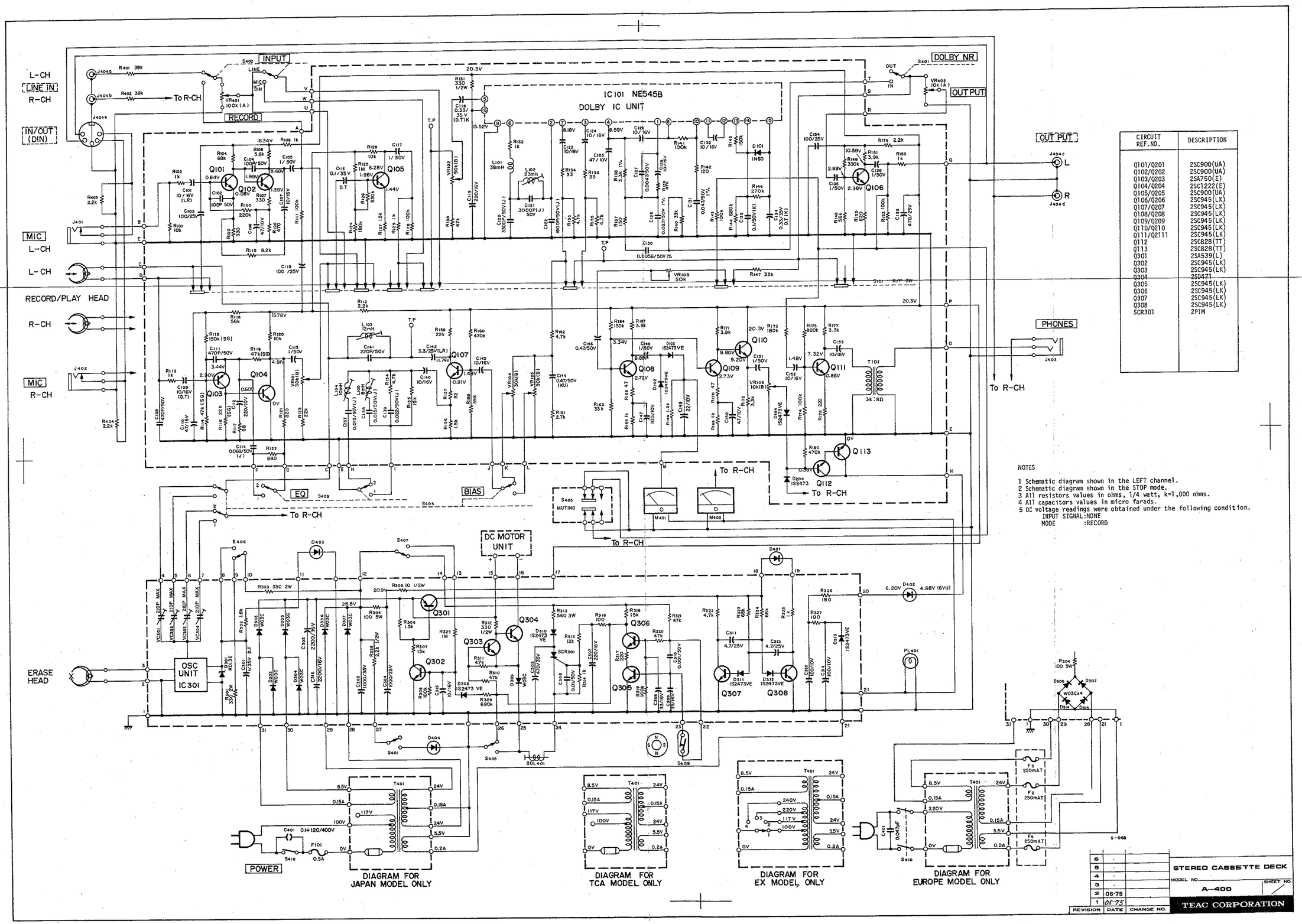
C301	50546709	Dip. Tant.	1μF	35V	
C302	51703020	Elec.	2200μF	16V	
C303	51700110	Elec.	1000μF	35V	
C304	50555580	Elec.	1000μF	25V	
C305	50554620	Elec.	470μF	35V	
C306	50548020	Mylar	0.01μF	50V	10%
C307	50554390	Elec.	220μF	16V	
C308, C309	50554260	Elec.	33μF	16V	
C310	50548320	Mylar	0.001μF	50V	10%
C311, C312	50554530	Elec.	4.7μF	25V	
C313, C314	50554570	Elec.	100μF	10V	
C315	50554050	Elec.	10μF	16V	
C316	51703020	Elec.	2200μF	16V	

TRIMMER CAPACITORS

VC301~VC304	50547020	210pF	Max.

MISCELLANEOUS

IC301	50400810	Oscillator Unit, 100kHz
	55544370	Pin, T4 Type



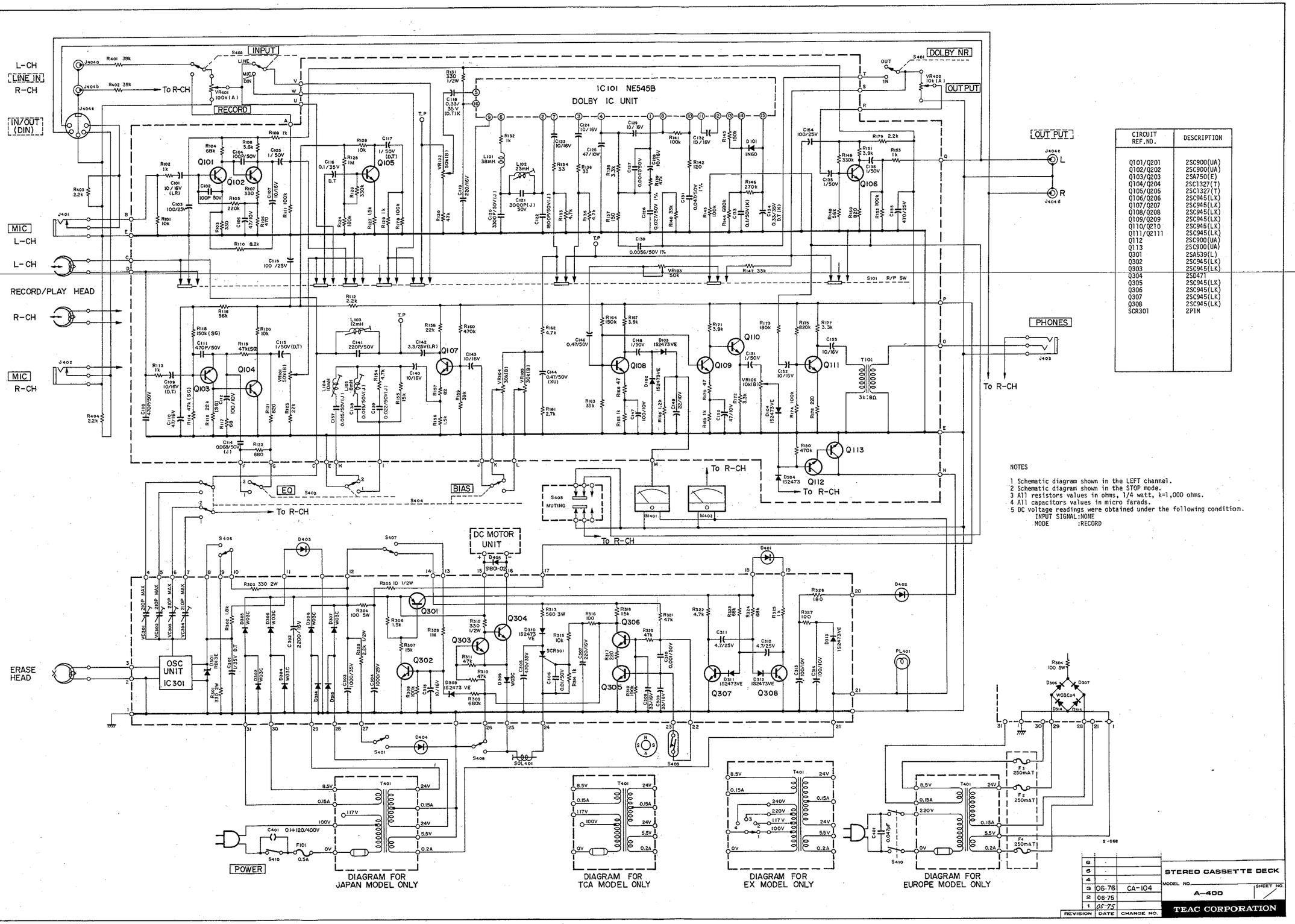
CIRCUIT REF.NO.	DESCRIPTION
Q101/Q201	2SC900(UA)
Q102/Q202	2SC900(UA)
Q103/Q203	2SA750(E)
Q104/Q204	2SC1222(E)
Q105/Q205	2SC900(UA)
Q106/Q206	2SC945(LK)
Q107/Q207	2SC945(LK)
Q108/Q208	2SC945(LK)
Q109/Q209	2SC945(LK)
Q110/Q210	2SC945(LK)
Q111/Q2111	2SC945(LK)
Q112	2SC828(TT)
Q113	2SC828(TT)
Q301	2SA539(L)
Q302	2SC945(LK)
Q303	2SC945(LK)
Q304	2SD471
Q305	2SC945(LK)
Q306	2SC945(LK)
Q307	2SC945(LK)
Q308	2SC945(LK)
SCR301	2P1M

NOTES

1 Schematic diagram shown in the LEFT channel.
2 Schematic diagram shown in the STOP mode.
3 All resistors values in ohms, 1/4 watt, k=1,000 ohms.
4 All capacitors values in micro farads.
5 DC voltage readings were obtained under the following condition.
INPUT SIGNAL:NONE
MODE :RECORD

REVISION	DATE	CHANGE NO.
6	·	
5	·	
4	·	
3	·	
2	06·75	
1	05·75	

STEREO CASSETTE DECK
MODEL NO. A-400
SHEET NO.
TEAC CORPORATION



CIRCUIT REF.NO.	DESCRIPTION
Q101/Q201	2SC900(UA)
Q102/Q202	2SC900(UA)
Q103/Q203	2SA750(E)
Q104/Q204	2SC1327(T)
Q105/Q205	2SC1327(T)
Q106/Q206	2SC945(LK)
Q107/Q207	2SC945(LK)
Q108/Q208	2SC945(LK)
Q109/Q209	2SC945(LK)
Q110/Q210	2SC945(LK)
Q111/Q211	2SC945(LK)
Q112	2SC900(UA)
Q113	2SC900(UA)
Q301	2SA539(L)
Q302	2SC945(LK)
Q303	2SC945(LK)
Q304	2SD471
Q305	2SC945(LK)
Q306	2SC945(LK)
Q307	2SC945(LK)
Q308	2SC945(LK)
SCR301	2P1M

NOTES

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4 All capacitors values in micro farads.
5 DC voltage readings were obtained under the following condition.
INPUT SIGNAL:NONE
MODE :RECORD

REVISION	DATE	CHANGE NO.
6	.	
5	.	
4	.	
3	06·76	CA-104
2	06·75	
1	05·75	

STEREO CASSETTE DECK
MODEL NO. A-400
SHEET NO.
TEAC CORPORATION

TEAC®

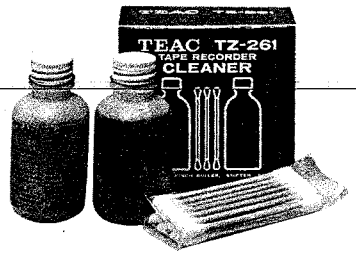
Stereo-Kassettendeck
Platine d'enregistrement stéréo à cassette
Stereo Cassette Tape Deck
Tape Deck de Cassette Estereofónico

Informations-Anhang

Information Supplement

Complément d'information

Suplemento de Información



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Einführung und Erwägungen äußerer Einflüsse

Zweck dieser Anleitung ist es, unsere Kunden in der ganzen Welt mit einer Fülle allgemeiner Information zu versorgen, die sich auf fast alle Kassettendecks anwenden läßt. Wir hoffen, daß dieser Anhang Ihr Verständnis für und Interesse an TEAC-Kassettendecks und somit Ihr Vergnügen erhöht, Ihr eigenes Kassettendeck zu besitzen und zu betreiben.

Erwägungen äußerer Einflüsse

Ihr TEAC-Kassettendeck ist gut durchkonstruiert und kann den vielseitigsten Umgebungsbedingungen angepaßt werden. Es ist jedoch dennoch ein elektro-mechanisches Gerät mit Grenzen, die in Betracht gezogen werden müssen. Um die Lebensdauer Ihres neuen Kassettendecks zu verlängern, sollten Sie die folgenden Faktoren beachten, wenn Sie das Kassettendeck aufstellen und betreiben.

Plätze mit konstant hoher Temperatur

Betreiben Sie dieses Gerät nicht in der Nähe von Heizkörpern, auf einem Verstärker oder in direktem Sonnenlicht. Extreme Temperaturen verursachen letztlich nicht nur eine Verschlechterung der Klangqualität, sondern verkürzen auch die nützliche Betriebslebensdauer des Gerätes. Vermeiden Sie Temperaturen über 38°C.

Extrem niedrige Temperatur: An solchen Plätzen werden die Schmiermittel dickflüssig und ein zufriedenstellender Betrieb kann nicht erwartet werden. Der Betrieb ist träge ansprechend und der Antriebsmotor kann überlastet werden. Vermeiden Sie Temperaturen unter 5°C.

Plätze mit hoher Feuchtigkeit

Die Lebensdauer des Gerätes wird wegen Korrosion und möglichen Pilzbewuchses der gedruckten Schaltungen verkürzt.

Staubige Plätze

Ihr TEAC-Kassettendeck ist ein Präzisionsgerät und sollte daher vor Staub geschützt sein. Betrieb in einer staubigen Umgebung verursacht übermäßige Abnutzung der Tonköpfe. Ihre Bänder sollten ebenso staubfrei gehalten werden.

Schwankungen der Netzspannung

Sollten Sie sich in einem Gebiet mit starken Schwankungen der Netzspannung befinden, ist die Verwendung eines Spannungsreglers empfehlenswert.

WARNUNG:
SETZEN SIE DIESES GERÄT ZUR VERHÜTUNG VON FEUER- UND STROMSCHLAGGEFAHR WEDER REGEN NOCH FEUCHTIGKEIT AUS.

Introduction et considérations générales

Le but de ce manuel est de fournir à nos clients, tout autour du monde, un minimum d'informations générales qui peuvent s'appliquer à presque toutes les platines pour cassettes. Nous espérons que ce petit supplément augmentera votre compréhension et votre intérêt pour les platines à cassette TEAC et ainsi augmentera votre plaisir de posséder et d'utiliser la vôtre.

Précautions pour la mise en place

Votre platine TEAC est soigneusement fabriquée et peut être utilisée dans des conditions aussez larges. Cependant, c'est un appareil électromécanique qui fonctionne entre des limites qui doivent être connues. Pour augmenter la durée de vie de votre nouvel appareil, tenez compte des indications suivantes quand vous l'installez et quand vous l'utilisez.

Endroits chauds en permanence

N'utilisez pas cet appareil près d'une source de chaleur, au-dessus d'un amplificateur ou directement sous le soleil. Une température trop élevée, non seulement diminuera la qualité du son, mais diminuera aussi la durée de vie de votre appareil. Evitez les températures supérieures á 38°C.

Températures très basses: Dans un tel endroit, les lubrifiants se durcissent et un bon fonctionnement ne pourra avoir lieu. Un ralentissement du mécanisme se produira causé par une surcharge sur le moteur d'entraînement. Evitez les températures inférieures à 5°C.

Endroits très humides

Par une oxydation et une moisissure possible des circuits imprimés, la durée de vie de votre appareil peut être diminuée.

Endroits poussiéreux

Votre platine TEAC est un appareil de précision et pour cela doit être protégé de la poussière. L'utilisation dans un tel endroit entraînera une usure prématurée des têtes. Votre bande également doit être protégée de la poussière.

Variation de la tension

Si vous vous trouvez dans une zone ou les variations de tension sont importantes, il est préférable d'utiliser un régulateur de tension.

ATTENTION:
POUR EVITER LES COURTS-CIRCUITS OU AUTRES DERANGEMENTS, NE LAISSEZ PAS VOTRE APPAREIL PRENDRE LA PLUIE OU EXPOSE A L'HUMIDITE.

Introduction and Environmental Considerations

The purpose of this manual is to supply our customers throughout the world a fund of general information that applies to almost all cassette decks. We hope this supplement will increase your understanding and interest in TEAC cassette tape decks and thereby increase your pleasure in owning and operating your own deck.

Environmental Precautions

Your TEAC Deck is well constructed, and adaptable to a wide range of environmental conditions. However, it is still an electro-mechancial device with limits to be considered. To prolong the life of your new deck, pay attention to the following factors when you install and operate the deck.

Constant High Temperature Locations

Do not operate this unit near heating appliances, on top of an amplifier, or in direct sunlight. Temperature extremes will ultimately not only cause degradation of sound quality, but will also shorten the useful operating life of the unit. Avoid temperatures higher than 38°C (100°F).

Extreme Low Temperature: In such locations, lubricants will harden and satisfactory operation cannot be expected. Operation will be sluggish and an overload may be placed on the drive motor. Avoid temperatures lower than 5°C (40°F).

High Humidity Locations

Will shorten equipment life from corrosion and possible fungus growth on printed circuit boards.

Dusty Environments

Your TEAC deck is a precision machine and as such should be protected from dust. Operation in a dusty atmosphere will result in excessive tape head wear. Your tapes should also be kept dust-free.

Fluctuation of the Supply Voltage

Should you be in an area where line voltage fluctuation is severe, the use of a voltage regulator may be advisable.

WARNING:
TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

Introducción y Consideraciones Ambientales

El objeto de este manual es el de proporcionar a nuestros clientes de todo el mundo un compendio de informaciones generales aplicables a casi todos los cassette decks. Esperamos que este suplemento aumente sus conocimientos e interés acerca de los cassette decks TEAC y, por consiguiente, aumente su placer en poseer y operar su propio deck.

Precauciones Ambientales

Su Deck TEAC está debidamente construido y se adapta a una vasta gama de condiciones ambientales. Sin embargo, es todavía un aparato electromecánico con límites a considerarse. Para prolongar la vida de su nuevo deck, preste atención a los siguientes factores al instalarlo y operarlo.

Lugares de Alta Temperatura Constante

Evitar la operación de esta unidad cerca de artefactos que irradien calor, sobre un amplificador, o contra la luz solar directa. Los extremos de temperaturea no solo causarán la merma de la calidad del sonido, sino también acortarán la vida en servicio útil de esta unidad. Deberán evitarse las temperaturas que sobrepasen a los 38°C (100°F).

Temperaturas Extremadamente Bajas: En tales lugares, los lubricantes se endurecerán y no podrá esperarse una operación satisfactoria. La operación será lenta y el motor impulsor podría sufrir sobrecargas. Evitar las temperaturas menores de 5°C (40°F).

Lugares con Gran Humedad

Estos acortarán la vida del equipo debido a la corrosión y posible crecimiento de hongos en las placas de los circuitos impresos.

Ambiente Polvoriento

Su Deck TEAC es un aparato de precisión y como tal debe protegerse contra el polvo. La operación en un ambiente polvoriento causará excesivo desgaste a la cabeza de la cinta. Sus cintas deben protegerse también contra el polvo.

Fluctuación de la Tensión de Alimentación

De hallarse en un área donde la fluctuación de tensión es severa, se recomienda emplear un regulador de tensión.

PRECAUCION:
PARA EVITAR PELIGROS CAUSADOS POR EL FUEGO O IMPACTOS, EVITAR LA EXPOSICION DE ESTE APARATO A LA LLUVIA O HUMEDAD.

Kassettenband-1

La cassette-1

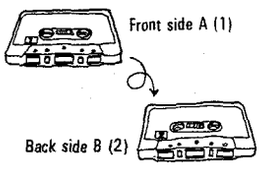


Fig. A

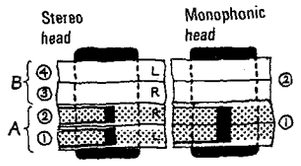


Fig. B

Aufnahmezeit

Kassettenaufnahmebänder werden auf Spulen in einer zweckmäßigen Spezialkassette aufgespult, die leicht in das Kassettendeck eingesetzt werden kann. Bandbreite, Kassettengehäuseform und -größe und Bandgeschwindigkeit sind für einen störungsfreien Betrieb genormt. Die C-60-Standardbandkassette enthält genügend Band, um 60 Minuten lang aufnehmen zu können. Die Kassetten C-30, C-90 und C-120 enthalten genügend Band für jeweils 30, 90 und 120 Minuten. (Bei allen Zeiten handelt es sich um Gesamtzeiten bei Verwendung beider Seiten des Bandes).

Verwendung beider Seiten des Kassettenbandes

Beide Seiten des Kassettenbandes können bespielt (oder wiedergegeben) werden. Siehe Abbildung A. Zur Unterscheidung ist die Kassette in der Regel mit Seite A (oder 1) und Seite B (oder 2) markiert. Um die für Aufnahme oder Wiedergabe vorgesehenen Seiten der Kassette zu wechseln, entfernen Sie einfach die Kassette aus dem Kassettendeck (durch Drücken der Auswurf-/Stopptaste (EJECT/STOP)) und drehen diese um. Das Kassettenband kann entweder monofon oder stereofonisch bespielt werden. Die verschiedenen Aufnahme- und Wiedergabeverfahren und die Anordnung der Tonköpfe wurden für einen störungsfreien Betrieb genormt. Siehe Abbildung B des stereofonischen/monofonen Tonkopfes.

Wahl von Bändern

TEAC-Kassettendecks sind so gebaut, daß Sie mit den verschiedenartigsten Kassettenbändern gut funktionieren. Chromdioxid (CrO_2)-, Ferrichrom (FeCr)- und HiFi-Bänder können mit ausgezeichneten Ergebnissen verwendet werden. In der Regel ist für CrO_2- und FeCr-Bänder eine höhere Vormagnetisierung erforderlich, wobei sie einen besseren Hochfrequenzgang bieten. Längere Kassettenbänder wie z.B. C-120 und C-180 sind sehr dünn und können leicht beschädigt werden. Wir empfehlen diese nicht für HiFi-Aufnahmen.

Für gute Stereoaufnahmen empfehlen wir Ihnen die ausschließliche Verwendung hochwertiger Markenbänder. Außerdem müssen Andruckrolle und Tonwelle sehr sauber gehalten werden, um einen einwandfreien Betrieb zu gewährleisten. Siehe O.

Durée d'enregistrement

Les bandes des cassettes sont enroulées sur des bobines incorporées dans des supports et ainsi peuvent facilement être introduites dans le logement prévu dans la platine. La largeur de la bande, la forme du support ainsi que ses dimensions, de même que la vitesse de déroulement sont normalisées, permettant l'interchangeabilité. Les cassettes standards C-60 contiennent assez de bande pour un enregistrement de 60 minutes. Les C-30, C-90 et C-120 contiennent assez de bande pour une durée de 30, 90 et 120 minutes respectivement. (Les durées indiquées sont les durées d'enregistrement des deux faces au total).

Utilisation des deux faces

Les deux faces de la cassette peuvent être enregistrées ou reproduites. Voir la figure A. Les cassettes sont habituellement repérées, face A (ou 1) et face B (ou 2). Pour changer la face de la cassette à enregistrer ou à reproduire, extrayez simplement la cassette de son logement (utilisez le bouton d'éjection/arrêt (EJECT/STOP)) et retournez la cassette. La bande de la cassette peut être enregistrée soit en monophonie, soit en stéréo. Les caractéristiques d'enregistrement ou de reproduction de même que les têtes ont été normalisées, permettant ainsi l'interchangeabilité. Voir la figure B des têtes stéréo/monophonie.

Choix des bandes

Les platines TEAC ont été construites pour utiliser une grande variété de cassettes. Les bandes au bioxyde de chrome (CrO_2), au ferro-chrome (FeCr) et Hi-Fi, peuvent être utilisées avec de bons résultats. Les bandes CrO_2 et FeCr demandent généralement une polarisation plus importante et donnent une réponse en hautes frequences améliorée. Les bandes les plus longues C-120, C-180 sont très fines et s'abîment facilement. Nous ne vous les recommendons pas pour des enregistrements haute fidélité. Pour de bons enregistrements stéréo nous vous recommandons de n'utiliser que les bandes de bonne qualité, les bandes de marque. La cabestan et la roulette de serrage doivent être très propres pour vous assurer un bon enregistrement. Voir figure O.

Cassette Tape-1

Cinta de Cassette-1

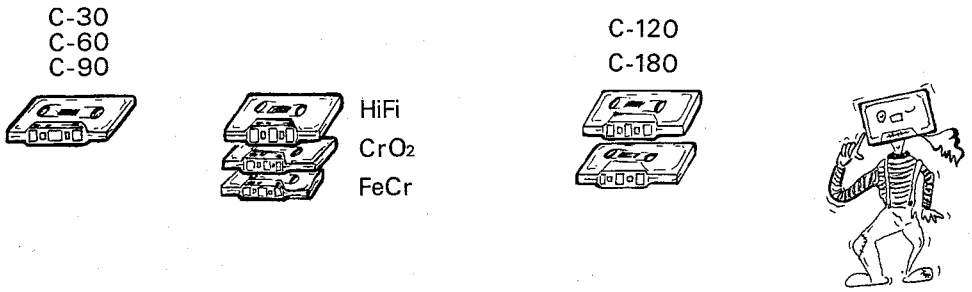


Fig. C

Recording Time

Cassette recording tapes are wound on reels in a special convenient case that is easily inserted into the cassette deck. The tape width, cassette container shape and size and the tape speed are standardized for compatibility. The standard C-60 cassette tape contains enough tape for 60 minutes of recording. The C-30, C-90 and C-120 cassettes contain enough tape for 30, 90 and 120 minutes respectively. (All times are total times when using both sides of the tape.)

Use Both sides of the Cassette

Both sides of the cassette tape can be recorded (or played). See fig. A. The cassettes are usually marked Side A (or 1) and Side B (or 2) for reference. To change sides of the cassette to be recorded or played, simply remove the cassette from the deck (using the EJECT/STOP Button) and turn it over.

The cassette tape can be recorded in either a monophonic or stereo format. The various record and palyback procedures as well as the head configurations have been standardized for compatibility. See the Stereo/monophonic head fig. B.

Choice of Tapes

TEAC tape decks are designed to work well with a wide variety of cassette tapes. Chromium dioxide (CrO_2), Ferri chrome (FeCr) and HiFi tapes can be used with excellent results. CrO_2 and FeCr tapes generally require higher bias and give improved high frequency response. The longer tape lengths such as C-120 and C-180 are very thin and are easily damaged. We do not recommend them for high fidelity recording.

For good stereo recording we recommend that you use only good quality, name brand tapes. Also the pinch roller and capstan must be kept very clean to insure proper operation. See fig. O.

Tiempo de Grabación

Las cintas de grabación de Cassette están enrolladas en carretes en una conviente caja especial que se inserta fácilmente en el cassette deck. El ancho de la cinta, la forma y tamaño del cassette y la velocidad de la cinta están estandarizadas para brindar compatibilidad.

El cassette estandard C-60 contiene suficiente cinta para 60 minutos de grabación. Los cassettes C-30, C-90 y C-120 contienen suficiente cinta para 30, 90 y 120 minutos de grabación, respectivamente. (Todos los tiempos son tiempos totales al emplear ambos lados de la cinta).

Empleo de Ambos Lados de la Cinta

Ambos lados de la cinta pueden grabarse (reproducirse). Referirse al figura A. Los cassettes llevan generalmente las marcas Side A (Lado A) (o 1) y Side B (Lado B) (o 2) como referencia. Para cambiar los lados de la cinta a grabarse o reproducirse, remover simplemente el cassette del deck (empleando el botón Expulsión/Parada (EJECT/STOP)) y darle la vuelta.

La cinta del cassette puede grabarse ya sea en forma monofónica como estereofónica. Los varios procedimientos de grabación y reproducción lo mismo que las configuraciones de la cabeza se han estandarizado para compatibilidad. Referirse al figura B para la cabeza Esterofónica/monofónica.

Selección de Cintas

Los tape decks de TEAC están diseñados para funcionar apropiadamente con una amplia variedad de cintas cassette. Cintas de dióxido de cromo (CrO_2), ferrocromo (FeCr) y de alta fidelidad pueden emplearse con excelentes resultados. Las cintas de CrO_2 y FeCr requieren por lo general una mayor polarización y proporcionan una respuesta de alta frecuencia mejorada. Las cintas de mayor longitud, tales como la C-120 y C-180, son muy delgadas y pueden dañarse fácilmente. Por consiguiente, no las recomendamos para grabaciones de alta fidelidad.

Para buenas grabaciones estereofónicas, recomendamos emplear solo cintas de marcas de alta calidad. Asimismo, el rodillo y el cabrestante deben mantenerse muy limpios para asegurar una operación apropiada.

Referirse a figura O.

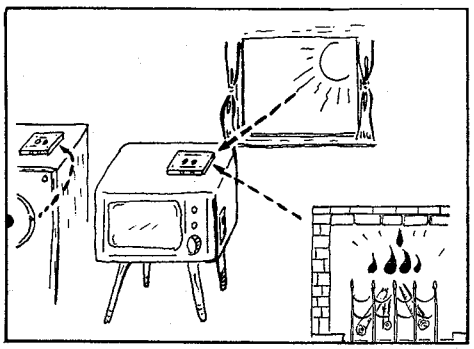


Fig. D

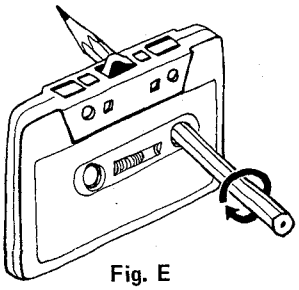


Fig. E

Handhabung von Bändern

Bewahren Sie Bänder nicht an den folgenden Plätzen auf.

- Auf Heizkörpern, in direktem Sonnenlicht oder an irgendeinem Platz mit hoher Temperatur.
- In der Nähe von Lautsprechern, auf Fernsehgeräten oder Verstärkern, oder in der Nähe von starken magnetischen Feldern.
- An Plätzen mit hoher Feuchtigkeit oder an schmutzigen, staubigen Plätzen.
- Lassen Sie Kassetten nicht fallen und setzen Sie diese keinen Erschütterungen aus.

Vor Bespielen oder Wiedergeben eines Kassettenbandes

Ein loses oder im Kassettengehäuse nicht straff gewickeltes Band kann sich an der Tonwelle oder Andruckrolle verwickeln. Um dieses Problem zu vermeiden, sollten Sie das Band überprüfen und (falls erforderlich) mit Hilfe eines Bleistiftes o.ä. gemäß Abbildung E straffen.

Schutz bespielter Bänder

Bespielte Kassettenbänder können gegen versehentliches Löschen oder nochmaliges Bespielen geschützt werden, indem Sie den ausgestanzten Aufnahmezapfen gemäß Abbildung F herausbrechen. Jede Kassette weist zwei Aufnahmezapfen auf, d.h. einen für jede Seite des Bandes. Wenn Seite A (oder 1) der Kassette gemäß Abbildung nach oben weist, befindet sich der Aufnahmezapfen für Seite A am rechten Ende des Kassettengehäuses und der Aufnahmezapfen für Seite B am linken Ende. Wenn dieser Zapfen herausgebrochen und die Kassette in ein Kassettendeck eingesetzt wird, kann dieses nicht auf Aufnahme-Betriebsart eingestellt werden, weil es mit einem Spezialfühlarm ausgestattet ist, der das Vorhandensein dieses Zapfens überprüft. Nach Entfernen des Zapfens sind die Aufnahme- und Löschfunktionen blockiert und das Band kann nicht nochmals bespielt werden. Falls der Zapfen herausgebrochen wurde (mittels Schraubenzieher gemäß Abbildung) und das Kassettenband später nochmals bespielt werden möchte, kann das Zapfenloch mit einem Klebband überklebt werden, um ein Aufnehmen zu ermöglichen. (Abbildung F, G).

Manipulation des bandes

Ne rangez pas vos bandes dans les endroits suivants:

- Sur des radiateurs ou directement au soleil ou dans un endroit très chaud.
- Près d'un haut-parleur, d'un poste de télévision ou d'un amplificateur ou dans le voisinage d'importants champs magnétiques.
- Endroits très humides, sales ou poussiéreux.
- Ne laissez pas tomber vos cassettes ou ne leurs occasionnez pas de chocs.

Préparation à l'enregistrement ou à la reproduction

Une bande lâche ou détendue dans une cassette peut accidentellement s'enrouler autour du cabestan ou de la roulette de serrage. Pour éviter cet ennui, vérifiez et retendez (si nécessaire) la bande en utilisant un crayon ou autre chose convenant, comme indiqué sur la figure E.

Protection des bandes enregistrées

Les bandes enregistrées peuvent être protégées contre un effacement ou un réenregistrement accidentel en retirant les languettes d'enregistrement comme indiqué sur la figure F. Chaque cassette contient deux languettes, une pour chaque côté de la bande. Avec la face A (ou 1) de la cassette au-dessus comme indiqué, la languette de la face A est à l'extrémité droite de la cassette et celle de la face B est à l'extrémité gauche. Quand la languette est retirée et la cassette introduite dans son logement, la platine ne peut être placée sur enregistrement parce que, il existe dans le logement un ergot destiné à contrôler la présence ou non de cette languette. Si la languette est retirée (utilisez un tournevis comme indiqué) et que plus tard l'utilisateur veuille réenregistrer la cassette, il suffit alors de placer une bande de ruban adhésif sur l'ouverture pour que l'opération devienne possible. (figure F, G).

Cassette Tape-2

Cinta de Cassette-2

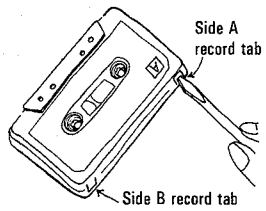


Fig. F

Fig. G

Tape Handling

Do not store tape in the following areas.

- On top of heaters, or in direct sunlight or in any other high temperature area.
- Near speakers, on TV sets or amplifiers, or near any strong magnetic fields. (Fig. D).
- High humidity areas or dirty, dusty areas.
- Do not drop or subject cassette to shock.

Before Recording or Playing Back a Cassette Tape

A tape that is loose or slack inside the cassette case may become wound around the capstan or pinch roller. To avoid this problem, check and tighten (if necessary) the tape by using a pencil or other suitable implement as shown in fig. E.

Protection of Recorded Tapes

Pre-recorded cassettes can be protected against accidental erasure or re-recording by removing the "punch out" record tab as shown in figure F. Each cassette contains two record tabs, one for each side of the tape. With Side A (or 1) of the cassette facing up as shown, the record tab for Side A is on the right end of the cassette case and the record tab for Side B is on the left end. When this tab is removed and the cassette inserted into a tape deck the deck cannot go into a record mode because the deck has a special sensing arm which checks for the presence of this tab. If the tab is removed, the record and erase functions are inhibited and the tape cannot be re-recorded. If the tab is removed, (using a screwdriver as shown) and later the recordist decides to re-record the cassette, a piece of tape can be placed over the tab hole to allow recording (Fig. F, G).

Manejo de la Cinta

No se deberá dejar la cinta en los siguientes lugares.

- Sobre calefactores, contra la luz solar directa o en cualquier otro lugar con alta temperatura.
- Cerca de altoparlantes, en televisores o amplificadores, o cerca de cualquier campo magnético.
- En sitios con alta humedad, sucios o polvorientos.
- Evitar, asimismo, causar caídas o impactos a los cassettes.

Antes de Grabar o Reproducir una Cinta de Cassette

Una cinta floja o suelta dentro de la caja del cassette podría quedar enrollada en el cabrestante o en el rodillo. Para evitar este problema, verificar y ajustar (de requerirse) la cinta empleando un lápiz u otro elemento apropiado, tal como se observa en el figura E.

Protección de las Cintas Grabadas

Las cintas pre-grabadas pueden protegerse contra borraduras accidentales o nuevas grabaciones removiendo la lengüeta, tal como se observa en la figura F. Cada cassette contiene dos lengüetas, una para cada lado de la cinta. Con el Lado A (o 1) del cassette hacia arriba tal como se observa, la lengüeta del Lado A queda situada al extremo derecho, y la lengüeta del lado B al extremo izquierdo. Cuando se remueve esta lengüeta y se inserta el cassette en el deck, éste no puede grabar ya que está provisto con un brazo sensor especial que verifica la existencia de dicha lengüeta. Si se remueve la lengüeta, (con un destornillador tal como se observa en la fig.) y posteriormente se desea volver a grabar la cinta, pegar una tira de cinta adhesiva sobre el orificio de la lengüeta para permitir la grabación (Figura F, G).

Wartung - Reinigung

Entretien - nettoyage

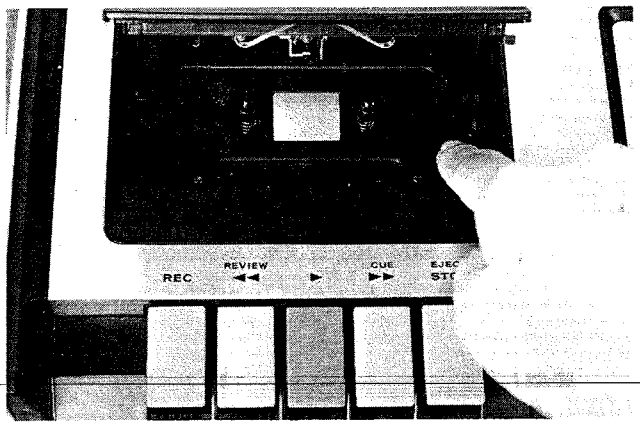


Fig. H

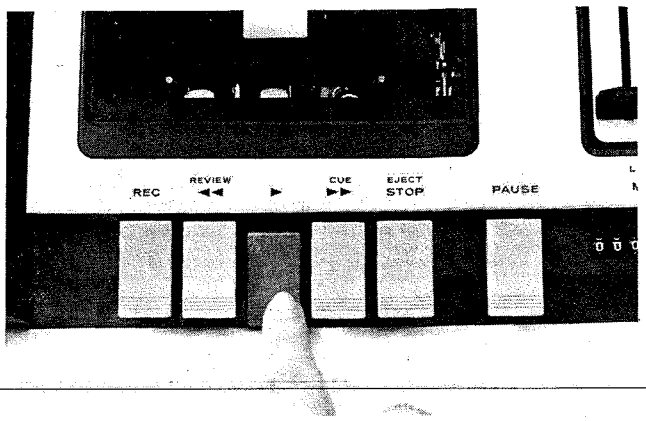


Fig. I

Tonköpfe

Nach langer Benutzung des Kassettendecks sammeln sich Bandoxid und andere Fremdkörper auf den Tonköpfen an. Verschmutzte Tonköpfe bewirken eine wesentliche Verschlechterung der Gesamtleistung der Tonköpfe und sie sind die Hauptursache von Aufnahme- und Wiedergabeproblemen wie z.B. reduzierter Hochfrequenzgang und Signalausfall. Mit stark verschmutzten Köpfen können Aufnahmen und Wiedergabe nicht durchgeführt werden. Um solche Probleme zu verhindern und eine längere Lebensdauer für die Tonköpfe zu gewährleisten, ist eine regelmäßige Reinigung unerläßlich. Reinigen Sie die Tonköpfe nach jeweils 8 Stunden Spielzeit. Ein guter Reinigungssatz wie z.B. der TEAC TZ-261 sollte verwendet werden. Die Flüssigkeit "A" des Satzes eignet sich vorzüglich zum Reinigen der Tonköpfe. Isopropylalkohol kann ebenfalls verwendet werden.

Reinigung

1. Öffnen Sie die Kassettenfachtür.
2. Drücken Sie den Kassettenhalter nach unten. Lassen Sie die Kassettenfachtür offen.
3. Wählen Sie die Wiedergabe-Betriebsart. Die Lösch- und Aufnahme/Wiedergabeköpfe werden für leichteres Reinigen nach außen gestellt.

Andruckrolle

Die Andruckrolle sollte ebenfalls regelmäßig gereinigt werden, um einen unregelmäßigen Bandlauf und dadurch verursachte stärkere Gleichlaufschwankungen zu verhindern. Zum TZ-261-Satz von TEAC gehört außerdem eine Spezialreinigungsflüssigkeit (Flüssigkeit "B" im Satz), die sich besonders zum Reinigen der Andruckrolle eignet.

Têtes

Après avoir utilisé la platine pendant un long moment, l'oxyde provenant du revêtement de la bande et autres matières tendent à se déposer sur les têtes. Des têtes encrassées peuvent diminuer de beaucoup le rendement normal des platines et sont l'une des premières causes des problèmes d'enregistrement et de reproduction telle que réduction de la réponse hautes frequences ou "lachâge". Des têtes très encrassées peuvent entraîner une cessation complète de l'enregistrement et de la reproduction. Pour éviter de tels problèmes et assurer une plus longue vie à vos têtes, vous devez procéder à leur nettoyage régulier. Ce nettoyage doit s'effectuer au moins après 8 heures de fonctionnement. Un bon nécessaire d'entretien comme le TZ-261 doit être utilisé. Le liquide "A" de ce nécessaire est parfait pour le nettoyage des têtes. Un peu d'alcool isopropylique peut aussi être utilisé.

Méthode d'entretien

1. Ouvrez la porte du logement de la cassette.
2. Poussez le logement de la cassette vers le bas. Laissez la porte ouverte.
3. Passez sur reproduction. Les têtes d'effacement et d'enregistrement/reproduction de même que la roulette de serrage apparaitront, facilitant le nettoyage.

Roulette de serrage

La roulette de serrage doit aussi être néttoyée régulièrement pour éviter des mouvements imprécis de la bande et l'accroissement de la fluctuation. Le nécessaire TEAC TZ-261 contient un liquide spécial (liquide B du nécessaire) qui est particulièrement efficace pour le nettoyage de la roulette de serrage.

Maintenance - Cleaning

Mantenimiento - Limpieza

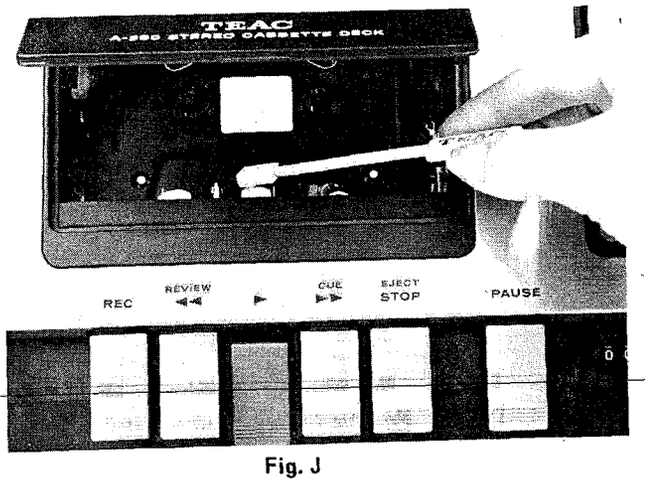


Fig. J

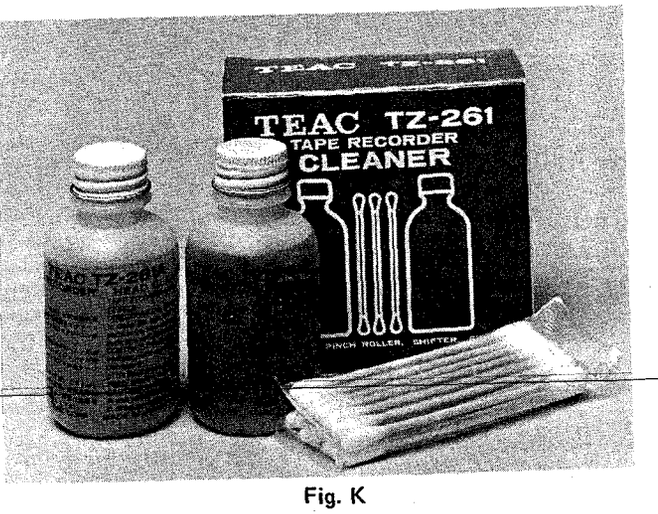


Fig. K

Heads

After the deck is used for a long time, tape oxide and other foreign matter tend to build up on the heads. Dirty heads will drastically reduce the overall efficiency of the deck and are a prime cause of both record and play problems, such as reduced high frequency response and "drop-outs". Exremely dirty heads may cause the heads to cease record and play altogether. To prevent such problems and to insure longer life for the heads, regular cleaning should be done; at least clean after every 8 hours of playing time. A good cleaning kit such as the TEAC TZ-261 kit should be used. Fluid "A" in the kit is ideal for cleaning the heads. Isopropyl alcohol may also be used.

How to Clean

1. Open the cassette holder door.
2. Push the cassette holder down. Keep the door open.
3. Select the Play mode. The erase and record/play heads as well as the pinch roller will extend for easier cleaning.

Pinch Roller

The pinch roller should also be cleaned regularly to prevent erratic tape movement and the increased wow and flutter that it causes. The TEAC TZ-261 kit also contains a special cleaning liquid (fluid "B" in the kit) that is especially effective in cleaning the pinch roller.

Cabezas

Después de usarse el deck por largo tiempo, el óxido y otras substancias ajenas tienden a acumularse en las cabezas. La eficiencia general de las cabezas sucias se reducirá grandemente y serán la causa principal de problemas de grabación y reproducción, tales como respuesta de alta frecuencia reducida y "caídas". Las cabezas extremadamente sucias no podrán grabar y reproducir. Para evitar tales problemas y asegurar una mayor vida de las cabezas se las deberá limpiar con regularidad; por lo menos después de cada 8 horas de reproducción. Debe emplearse un juego de limpieza apropiado tal como el TZ-261. El Flúido "A" de dicho juego es ideal para limpiar las cabezas. También puede emplearse alcohol isopropílico.

Para limpiar

1. Abrir la tapa del portacassette.
2. Empujar el portacassette hacia abajo, manteniendo la tapa abierta.
3. Seleccionar la posición de reproducción. Las cabezas de grabación/reproducción y borrado, así como el rodillo, se extenderán para facilitar la limpieza.

Rodillo

El rodillo debe limpiarse también regularmente para evitar los movimientos erráticos de la cinta y el aumento de ululación y vibración que los mismos causen. El juego de limpieza TEAC TZ-261 contiene asimismo un líquido de limpieza (flúido B) que es especialmente efectivo para limpiar el rodillo.

Wartung - Entmagnetisierung

Entretien - démagnétisation

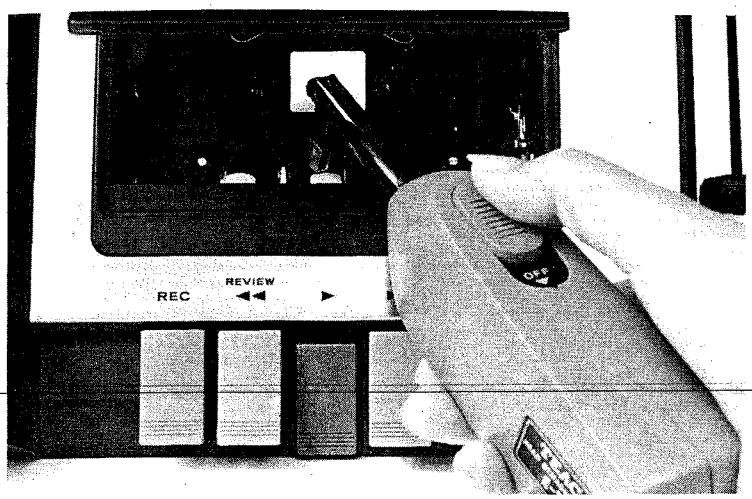


Fig. L

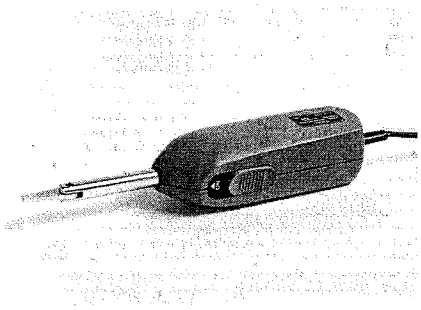


Fig. M

Entmagnetisierung

Tonköpfe und Bandweg werden nach längerer Benutzung aufmagnetisiert. Sollte dies der Fall sein, wird die Aufnahme- und Wiedergabeleistung beeinträchtigt und die Gesamtklangqualität schlechter. Magnetisierte Tonköpfe und Bandweg können außerdem einen Qualitätsverlust Ihrer bespielten Bänder verursachen. Um derartige Probleme zu verhindern empfiehlt TEAC eine Entmagnetisierung der Tonköpfe und des Bandwegs nach jeweils ungefähr 50 Stunden Betrieb des Kassettendecks.

Ein guter Kopfentmagnetisierer oder -löscher wie z.B. der E-3 von TEAC ist für diese wichtige vorbeugende Wartungsarbeit empfehlenswert.

Lösch- und Aufnahme/Wiedergabekopf und sämtliche Metallteile, die mit dem Band in Berührung kommen, sollten entmagnetisiert werden.

Entmagnetisierungsvorgang

1. Schalten Sie das Kassettendeck aus.
2. Stellen Sie die Tonköpfe gemäß Beschreibung der Schritte 1 — 3 des Reinigungsverfahrens nach außen.
3. Schalten Sie den Kopflöscher (Entmagnetisierer) ein und bringen Sie dessen Spitze in unmittelbare Nähe der Köpfe.
   Bewegen Sie die Spitze über alle Köpfe und andere Teile im Bandweg auf und ab.
4. Bewegen Sie den Löscher langsam ungefähr 30 cm von der Kopffläche weg.
5. Schalten Sie den Löscher aus.

Achten Sie darauf, beim Entmagnetisieren der Köpfe bespielte Bänder nicht in die Nähe des Löschers zu bringen.

Démagnétisation

Les têtes et le passage de la bande, tendent à se magnétiser après une longue période de fonctionnement. Quand cela se produit, le rendement de l'enregistrement et de la reproduction diminuent et la qualité normale du son devient plus mauvaise. Des têtes et un passage de bande magnétisés peuvent également, abîmer les bandes enregistrées. Pour résoudre ces problèmes, TEAC recommande de démagnétiser les têtes et le passage de la bande toutes les 50 heures d'utilisation environ. Pour cet entretien très important de prévention, un bon demagnétiseur de têtes tel que le TEAC E-3 vous est recommandé. Les têtes d'effacement et d'enregistrement/reproduction, de même que toutes les parties métalliques en contact avec la bande doivent être démagnétisées.

Méthode de démagnétisation

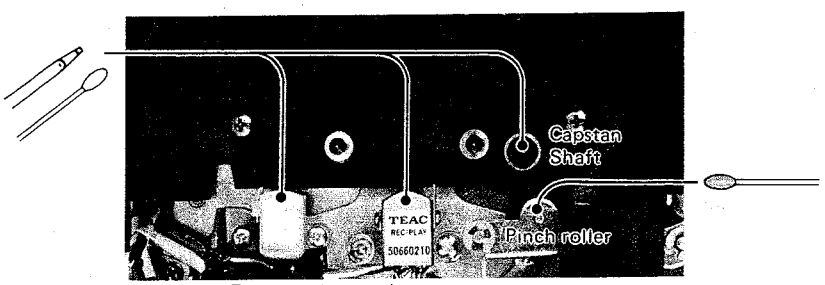
1. Coupez le courant.
2. Dégagez les têtes comme indiqué dans les parties 1 - 3 de la méthode d'entretien.
3. Mettez en marche la tête du démagnétiseur et approchez-la près des têtes.
   Passez le bout de cette tête de haut en bas et en travers des têtes à démagnétiser ainsi que le long du passage de la bande.
4. Retirez doucement le démagnétiseur jusqu'à une distance d'environ 30 cm.
5. Coupez le courant du démagnétiseur.

Faites bien attention de conservez vos bandes au loin, lors de cette opération.

Maintenance - Demagnetizing

Mantenimiento - desmagnetización

Fig. N



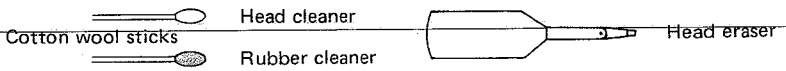


Fig. O

Capstan	Tonwelle Cabestan Cabrestante	**Cotton wool sticks**	Baumwoll-Reinigungsstäbchen Bâtonnets à tampon de cotton Palillos con punta de algodón
Pinch roller	Andruckrolle Roulette de serrage Rodillo	**Head cleaner**	Kopfreiniger Bâtonnet pour les têtes Limpiador de la cabeza
Erase head	Löschkopf Tête d'effacement Cabeza de borrado	**Rubber cleaner**	Gummireiniger Bâtonnet pour la roulette de serrage Limpiador de goma
Recording/playback head	Aufnahme/Wiedergabe-Tonkopf Tête d'enregistrement/reproduction Cabeza de grabación/reproducción	**Head eraser**	Kopflöscher Polisseur pour les têtes Borrador de la cabeza

Demagnetizing

The heads and tape path tend to become magnetized after extended use. When this occurs the record and playback efficiency decreases and the overall sound quality deteriorates. The magnetized heads and tape path can cause degradation of your pre-recorded tapes also. To prevent such problems, TEAC recommends that the heads and tape path be demagnetized after approximately every 50 hours of deck use.

A good head demagnetizer or eraser such as the TEAC E-3 is recommended for this important preventive maintenance job.

The erase head and record/play head as well as all metal parts that contact the tape should be demagnetized.

Demagnetizing Procedure

1. Turn the deck power OFF.
2. Extend the heads as explained in steps 1 — 3 in the cleaning procedure.
3. Turn on the head eraser (demagnetizer) and bring the tip of it close to the heads.
   Move the tip up and down across all the heads and other parts in the tape path.
4. Slowly withdraw the eraser about 12 inches (30 cm) away from the head area.
5. Turn OFF the eraser.

Be sure to keep all recorded tapes away from the eraser during demagnetizing of the heads.

Desmagnetización

Las cabezas y la vía de la cinta tienden a magnetizarse después de usos prolongados. Cuando esto ocurre, la eficiencia de grabación y reproducción disminuye y la calidad total del sonido sufre deterioros. Del mismo modo, las cabezas y vía de la cinta magnetizadas podrían mermar la calidad de sus cintas pre-grabadas. Para evitar tales problemas, TEAC recomienda la desmagnetización de los elementos arriba mencionados a intervalos de 50 horas de uso del deck.

Se recomienda el empleo de un desmagnetizador o borrador apropiado, tal como el TEAC E-3, para este importante trabajo de mantenimiento.

Las cabezas de grabación/reproducción y borrado, al igual que todas las partes mecánicas en contacto con la cinta, deberán desmagnetizarse.

Procedimiento de Desmagnetización

1. Apagar el deck (OFF)
2. Extender las cabezas, tal como se explicó en los pasos 1 - 3 del procedimiento de limpieza.
3. Accionar el borrador de la cabeza (desmagnetizador) y acercar su punta a las cabezas.
   Mover dicha punta hacia arriba y abajo por las cabezas y otras partes de la vía de la cinta.
4. Retirar lentamente el borrador a aproximadamente 12 pulgadas (30 cm) del área de las cabezas.
5. Apagar (OFF) el borrador.

Cerciorarse de mantener todas las cintas alejadas del borrador durante la desmagnetización de las cabezas.

Wartungshinweis und Fehlersuchtabelle

Die grundsätzliche Behebung von Störungen bei einem Kassettendeck ist ähnlich wie die Behebung von Störungen bei irgendeinem anderen elektrischen oder elektronischen Gerät. Überprüfen Sie immer zuerst die offensichtlichsten möglichen Ursachen wie z.B. Netzkabel, Sicherung, Einstellung der Schalter und Regler, richtige Anschlüsse an das gewünschte Eingangs- und Ausgangssignal usw. Beziehen Sie sich auf Ihre Bedienungsanleitung für richtige Bedienung und Hinweise.
Falls nach Überprüfung der betreffenden Stellen immer noch eine Betriebsstörung vorliegt, setzen Sie sich bitte mit dem TEAC-Fachhändler, bei dem Sie das Kassettendeck kauften, oder der nächsten TEAC-Kundendienststelle in Verbindung.

Remarques et tableau des pannes

Les pannes principales d'un magnétophone à cassettes sont les mêmes que celles de n'importe quel autre appareil électrique ou électronique Contrôlez toujours le plus de causes évidentes possibles, telles que: alimentation, cordon d'alimentation, fusibles, interrupteur, réglages et positions des différentes commandes, connexions entre les différentes entrées et sorties du signal etc. Reportez vous à votre manuel de l'utilisateur pour la méthode d'utilisation et les instructions.
Si vous avez encore un problème après cela, contactez votre revendeur TEAC où vous avez acheté votre appareil, ou le plus proche agent TEAC agréé.

Fehlersuchtabelle / Tableau des pannes

STÖRUNGEN PANNES	MÖGLICHE ABHILFE	ACTIONS POSSIBLES
BANDLAUF / ENTRAÎNEMENT DE LA BANDE		
Kein Strom Pas de courant	Netzkabelanschluß überprüfen	Vérifiez votre cordon d'alimentation
Band wird nicht umgespult La bande ne défile pas	Pausentaste (PAUSE) oder Knopf ausrasten Mittels Rückspul- oder Schnellvorlauf-Betriebsart versuchen, schlecht gewikkeltes Band wieder zu straffen.	Débloquez le bouton ou la touche d'attente (PAUSE) Essayez de réenrouler ou d'enrouler rapidement pour resserer une bande mal enroulée
WIEDERGABE / REPRODUCTION		
Kein Ton aus der Verstärkeranlage Pas de son sur l'amplificateur	Nochmals sämtliche Anschlüsse überprüfen Eingangspegel zum Verstärker erhöhen Pegelregler und Schalterstellungen am Verstärker überprüfen	Vérifiez toutes vos connexions Augmentez le niveau d'entrée vers l'amplificateur Vérifiez le réglage du volume et la position des boutons sur l'amplificateur.
Schlechte Klangqualität Son de mauvaise qualité	Tonköpfe reinigen Gutes, neues Band ausprobieren Tonköpfe und Bandweg entmagnetisieren	Nettoyez les têtes Essayez une bande neuve et en bon état Demagnétisez les têtes et le passage de la bande
Unterschiedliche Lautstärke Niveau non stable	Andruckrolle mittels TZ-261-Satz reinigen	Nettoyez la roulette de serrage avec le TZ-261
AUFNAHME / ENREGISTREMENT		
Aufnahme-Betriebsart kann nicht gewählt werden Impossibilité de passer sur enregistrement	Eine aufnahmebereite Kassette, mit intakten Rückenlamellen oder deren Lamelleulöcher mit Klebband überklebt sind. Siehe Seite 5.	Placez une cassette enregistrable, c'est à dire qui a ses languettes d'enregistrement ou du ruban adhésif sur les ouvertures. Voir page 5.
Aussteuerungsanzeiger zeigen keinen Pegel an, Eingangssignal ist nicht zu hören Pas de déviation sur les contrôleurs, impossibilité d'entendre le signal d'entrée	Nochmals die Anschlüsse überprüfen Aufnahmepegelregler auf höheren Pegel einstellen Tonköpfe entmagnetisieren Einstellung der Schalter für Vormagnetisierung (BIAS) und Entzerrung (EQ) anhand der Tabelle in der Bedienungsanleitung nochmals überprüfen	Vérifiez vos connexions Augmentez le niveau de l'enregistrement Demagnétisez les têtes Revérifiez le réglage du bouton de polarisation/égalisation (BIAS/EQ) en respectant les indications de votre manuel de l'utilisateur

Hinweis für Ölen: Bei normalen Betriebsbedingungen ist ein Ölen Ihres Kassettendecks nicht erforderlich.
Remarque sur la lubrification: Dans des conditions normales de fonctionnement, il n'est pas nécessaire de lubrifier le mécanisme de votre platine.

Service Note and Trouble-shooting Chart

Nota de servicio y tabla para detectar averías

Basic trouble-shooting of an cassette tape deck is similar to trouble-shooting any other electrical or electronic equipment. Always check the most obvious possible causes first including such things as: power cord, fuse, switch and control setting or position, proper connections to the desired input and output signal, etc. Consult your Owner's Manual for the correct operating procedure and instructions.
If a problem still exists after the applicable items are checked, Please contact the TEAC dealer where the deck was purchased or the nearest TEAC authorized service facility.

La detección básica de averías de un tape deck de cassette es similar a la de cualquier otro equipo electrónico o eléctrico. Comprobar siempre las causas posibles más obvias, tales como: cable de energía, fusible, posición o fijación de los interruptores o controles, conexiones apropiadas a la señal deseada de entrada y salida, etc. Referirse a su Manual del Usuario para los procedimientos e instrucciones de operación correctos.
En caso de subsistir un problema luego de haber verificado las causas más comunes, se recomienda acudir al distribuidor TEAC donde se adquirió el deck, o a la estación de servicio más cercana autorizada por TEAC.

Trouble-shooting Chart / Tabla de Detección de Averías

TROUBLES AVERÍAS	POSSIBLE CURE	REMEDIOS
TAPE TRANSPORT / MOVIMIENTO DE LA CINTA		
No power No hay energía	Check power cord connection	Verificar la conexión del cable de energía
No tape movement La cinta no se mueve	Release PAUSE key or knob Try Rewind or FF mode to repack poorly wound tape.	Liberar la tecla o el botón Pausa (PAUSE). Accionar Rewind (Reenrollado) o FF (Avance Rápido) para corregir la cinta enrollada inadecuadamente
PLAYBACK / REPRODUCCIÓN		
No sound No hay sonido en el sistema amplificador	Recheck all connections Increase output level Check level controls and switch settings	Verificar todas las conexiones. Aumentar el nivel de entrada al amplificador. Verificar los controles de nivel y las posiciones del interruptor en el amplificador.
Poor sound quality Mala calidad del sonido	Clean heads Try good, new tape De-magnetize heads and tape path	Limpiar las cabezas. Probar con una cinta nueva. Desmagnetizar las cabezas y la vía de la cinta
Unsteady sound level Nivel del sonido inestable	Clean pinch roller with TZ-261 kit	Limpiar el rodillo con el juego TZ-261.
RECORDING / GRABACIÓN		
Unable to select Record mode Es impossible seleccionar la posición de grabación	Install recordable cassette which has record protection tabs or tape affixed over tab holes. See page 6.	Insertar un cassette grabable que tenga las lengüetas de protección de grabación o cinta adherida sobre los orificios de las lengüetas. Referirse a página 6.
No level indication on meters, unable to hear input signal Sin indicación de nivel en los medidores, imposible escuchar la señal de entrada	Recheck connections Increase Record level controls De-magnetize heads Recheck BIAS/EQ switch setting according to chart in Owner's Manual	Verificar las conexiones. Subir los controles del nivel de grabación. Desmagnetizar las cabezas Verificar la posición del interruptor BIAS/EQ (Polarización/Compensación) de acuerdo con la tabla en el Manual del Usuario.

Lubrication note: Under normal operating conditions lubrication of your deck is not required.
Nota de lubricación: La lubricación de su deck no se requiere bajo condiciones normales de operación.

Vormagnetisierung und Entzerrung

Vormagnetisierung

Bei der Vormagnetisierung handelt es sich um ein hochfrequentes Wechselstromsignal, das beim Aufnehmen dem Band zugeleitet wird, um die magnetischen Teilchen auf dem Band für einwandfreie Aufnahmen zu konditionieren. Das Vormagnetisierungssignal ist für gute magnetische Aufnahmen von größter Wichtigkeit. Die einem Band zugeleitete Menge von Vormagnetisierungsstrom beeinflußt den Rauschabstand, Frequenzgang und das Verzerrungsverhältnis des Bandes. Die für optimale Ergebnisse erforderliche Menge von Vormagnetisierungsstrom ändert sich außerdem je nach Oxidtyp, der als Aufnahmeträger eines Bandes verwendet wird. Die drei Hauptklassen der Bandbeschichtungen sind Ferrioxid, Chromdioxid (CrO_2) und Ferrichrom (FeCr). Die meisten hochwertigen Kassettendecks sind mit einem Schalter ausgerüstet, der zur Wahl des geeignetsten Vormagnetisierungspegels für die drei Bandklassen eingestellt werden kann. TEAC stellt eine Tabelle für die Einstellung des Vormagnetisierungsschalters zur Verfügung, um Kunden bei der Wahl des geeignetsten Vormagnetisierungspegels für verschieden führende Bandmarken und -typen zu helfen. Andere Bänder guter Qualität können ebenfalls verwendet werden. Ideal wäre die Wahl einer Spezialbandmarke in jeder der drei Klassen und Einstellung der Vormagnetisierungsschaltung des Kassettendecks auf den für jedes Band erforderlichen genauen Vormagnetisierungspegel.

Entzerrung

Bei der Entzerrungsschaltung handelt es sich um eine in Tonbandgeräte eingebaute Spezialschaltung, die zum Ausgleichen der beim Aufnahme-/Wiedergabevorgang auftretenden Eigenverluste entwickelt wurde. In der Regel werden bei Aufnahmen die Höhen und bei Wiedergabe die Bässe angehoben.

Für verschiedene Bandtypen sind außerdem etwas unterschiedliche Entzerrerschaltungen erforderlich. Der Entzerrungsschalter der TEAC-Kassettendecks kann zum Wählen der für einwandfreie Aufnahmen und Wiedergabe erforderlichen richtigen Menge von Vormagnetisierungsstrom verwendet werden.

Polarisation et égalisation

Polarisation

La polarisation est produite par un signal alternatif de haute fréquence qui est appliqué à la bande pendant l'enregistrement pour mettre en condition les particules magnétiques de la bande pour obtenir un bon rendement de l'enregistrement. La polarisation est absolument nécéssaire à un bon enregistrement. Le degré de polarisation à appliquer à une bande influe sur le rapport signal/bruit, la réponse en fréquence et la distorsion de la bande. Le degré de polarisation nécéssaire aux meilleurs résultats dépend de l'oxyde utilisé dans le revêtement de la bande. Les trois principales catégories de revêtement sont, l'oxyde de fer, le bioxyde de chrome (CrO_2), et le ferro-chrome (FeCr). Les platines pour cassettes les plus perfectionnées comportent un sélecteur qui permet de choisir le degré de polarisation le mieux adapté à ces trois catégories de bande. TEAC fournit un tableau des positions du bouton de polarisation pour aider l'utilisateur dans le choix du degré de polarisation convenant le mieux pour une marque et une bande données. D'autres bandes de bonne qualité peuvent aussi être utilisées. L'idéal serait que l'utilisateur choisisse une marque de bande dans chacune des trois categories et que son circuit de polarisation soit réglé pour le degré exact de polarisation nécessité pour chaque bande.

Egalisation

L'égalisation est un circuit spécial ajouté et fabriqué sur les magnétophones pour compenser les pertes inhérentes à l'appareil, qui se produisent pendant le procédé d'enregistrement/reproduction. Normallement une mise en valeur des aigus est appliquée pendant l'enregistrement et une mise en valeur des graves est appliquée pendant la reproduction.

Des bandes de qualité differente nécessitent des égalisations légèrement différentes. Le bouton d'égalisation des platines TEAC peut être utilisé pour choisir le degré d'égalisation nécessaire pour un bon enregistrement et une bonne reproduction.

Bias and Equalization

Bias

Bias is a high frequency AC signal that is applied to the tape during recording to pre-condition the magnetic particles on the tape for efficient recording. The bias signal is absolutely essential for good magnetic recording. The amount of bias applied to a tape affects the signal-to-noise ratio, frequency response and distortion ratio of the tape. Also the amount of bias required for optimum results varies according to the type of oxide used as the recording medium of a tape. The three main categories of tape coatings are ferric oxide, chromium dioxide (CrO_2), and ferri chrome (FeCr). Most high quality cassette decks are equipped with a switch that may be set to select the most proper level of bias for the three categories of tape. TEAC provides a bias switch setting chart to assist the customers in the selection of the most proper level of bias for various representative brands and types of tape. Other good quality tapes may also be used. Ideally, the recordist could select a special brand of tape in each of the three categories and have the bias circuitry of this deck adjusted for the exact level of bias each tape requires.

Equalization

Equalization is special circuitry that is designed and built into tape recorders to compensate for inherent losses that occur during the record/reproduce process. Normally treble boost is applied during recording and bass boost during playback.

Different types of tapes also require slightly different equalization networks. The EQ switch on TEAC tape decks can be used to select the correct amount of equalization necessary for proper record and play back.

Polarización y Compensación

Polarización

La polarización es una señal de CA de alta frecuencia que se aplica a la cinta durante la grabación para acondicionar previamente las partículas magnéticas en la cinta para una grabación eficiente. La señal de polarización es absolutamente esencial para una buena grabación magnética. La cantidad de polarización aplicada a una cinta afecta a la relación señal a ruido, a la respuesta de frecuencia y a la relación de distorsión de la cinta. Asimismo, la cantidad de polarización requerida para obtener resultados óptimos varía de acuerdo al tipo de óxido empleado como medio de grabación en una cinta. Los tres tipos pricipales de revestimientos de cinta son: óxido férrico, dióxido de cromo (CrO_2) y ferrocromo (FeCr). La mayoría de los cassette deck de alta calidad están equipados con un interruptor que puede fijarse para seleccionar el nivel más apropiado de polarización para los tres tipos de cinta antedichos. TEAC proporciona una tabla de ajuste del interruptor de polarización para ayudar a los clientes en la selección del nivel de polarización más apropiado para las varias marcas y tipos representativos de cinta. También pueden emplearse otras cintas de buena calidad. Idealmente, el usuario podría elegir una marca especial de cinta de entre los tres tipos y tener el circuito de polarización de su deck ajustado al nivel exacto de polarización requerido por cada cinta.

Compensación

Hay un circuito especial diseñado e incorporado a las grabadoras para compensar las pérdidas inherentes que ocurren durante los procesos de grabación y reproducción. Normalmente, la atenuación de las altas se aplica durante la grabación y la de las bajas durante la reproducción.

Los diferentes tipos de cintas requieren asimismo redes de compensación ligeramente diferentes. El interruptor EQ (compensación) en los tape deck de TEAC puede emplearse también para seleccionar la cantidad correcta de compensación necesaria para grabar y reproducir apropiadamente.

Informations-Anhang
Stereo-Kassettendeck

Information Supplement
Stereo Cassette Tape Deck

Complément d'information
Platine d'enregistrement stéréo à cassette

Suplemento de Información
Tape Deck de Cassette Estereofónico

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